TO THE SOUTH · SEAS ·

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PINCHOT

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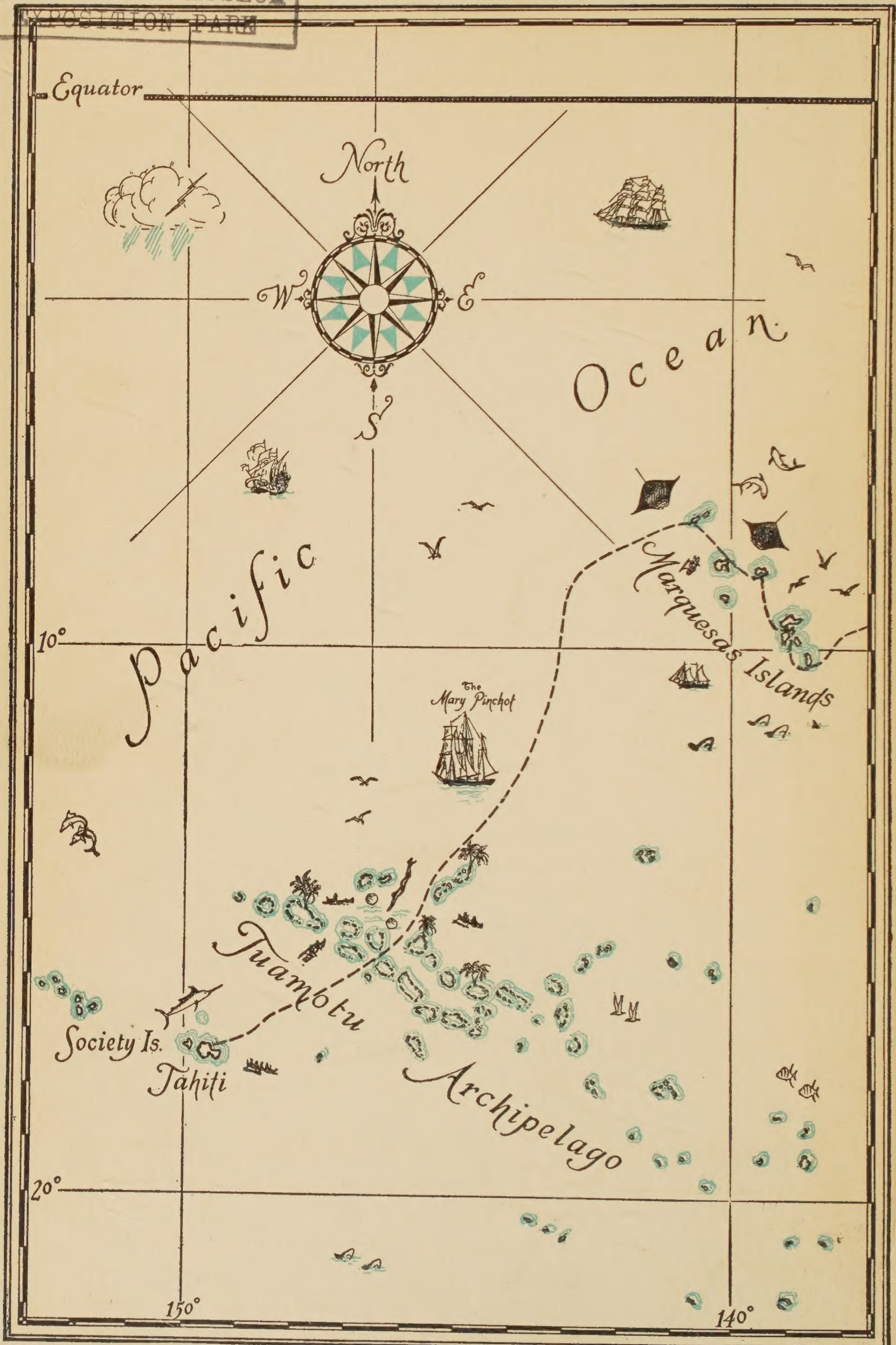
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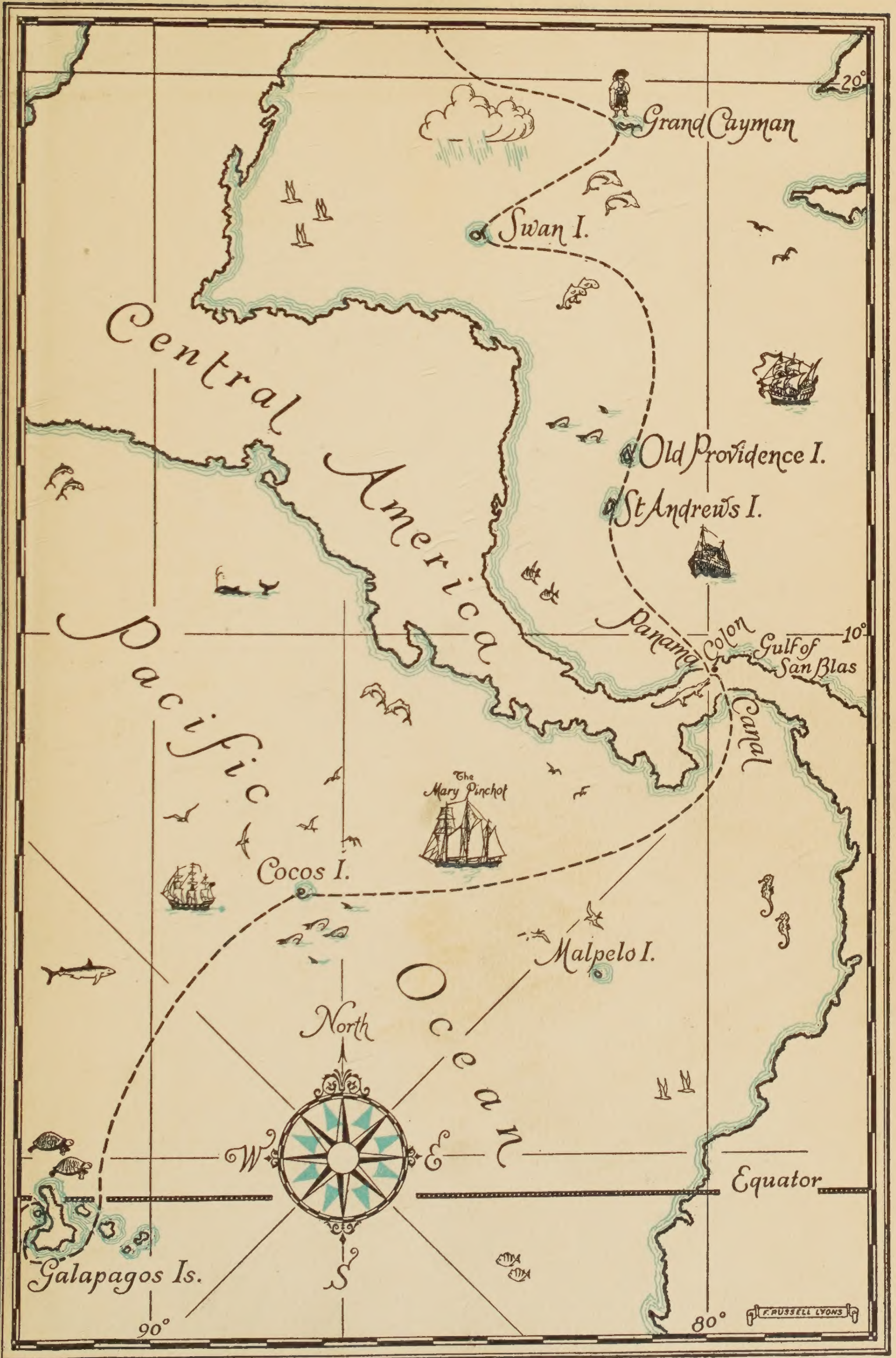
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Central America
Old Providence I.
St Andrews I.
Panama
Colon
Gulf of San Blas
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Pacific Ocean
The Mary Pinchot
Cocos I.
Malpelo I.
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Galapagos Is.
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F. RUSSELL LYONS

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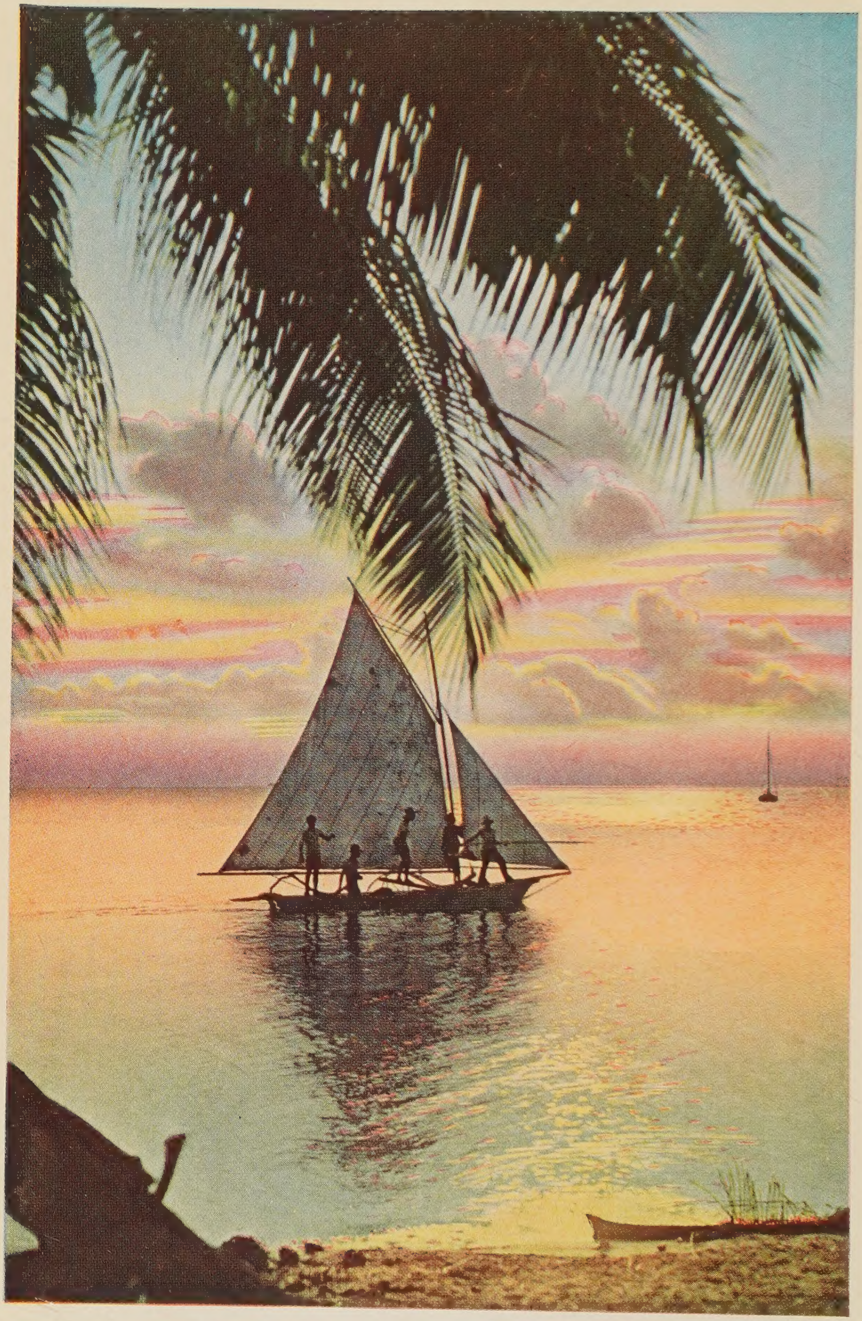

In the South Seas, where dreams come true

TO THE SOUTH SEAS

THE CRUISE OF THE SCHOONER MARY PINCHOT TO THE GALAPAGOS, THE MARQUESAS, AND THE TUAMOTU ISLANDS, AND TAHITI

BY
GIFFORD PINCHOT

ILLUSTRATED
WITH OVER 250 REPRODUCTIONS OF
PHOTOGRAPHS TAKEN ON THE CRUISE
AND WITH WOOD ENGRAVINGS

THE JOHN C. WINSTON COMPANY
CHICAGO PHILADELPHIA TORONTO

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To

GEORGE W. WOODRUFF

FRIEND AND COMRADE IN WORK AND PLAY FOR FORTY YEARS, THIS STORY OF THE VOYAGE HE HELPED TO PLAN BUT COULD NOT SHARE IS DEDICATED IN LIFELONG AFFECTION, ADMIRATION, AND RESPECT.

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ALOFT

L. N. Taylor

LOS ANGELES MUSEUM
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I

DREAMS DO COME TRUE

ONCE upon a time when all the world was young and all the trees were green, two sophomores at Yale (and sophomore means "a wise fool") decided that some day they would sail away to the South Seas in a schooner of their own.

Together they planned their trip to the enchanted islands where all men and most women would dearly love to go, and they were very serious about it.

One of these pilgrims of hope shortly became captain of the Yale crew and the most famous football man of his time. As right guard in the Yale line, George Woodruff used to plow down the field, burdened but not stopped by a mass of opposing players that hid every vestige of him but his feet. Since then, as Attorney General of Pennsylvania and a foremost authority on the law of conservation, he has kept on carrying other people on his broad back.

The other pilgrim just barely won his "Y" as a substitute on the team. Forty years later, when the time to go actually came around, the great player and great lawyer could not get away. The substitute saw his chance and went, and this is his story.

For him, after forty years, the lions that had barred the way all turned into purring tabby cats. The years of his Governorship were over and past; the time of the singing of birds was due to come; and if the song of the Galapagos turtle was to be heard in that distant land, he wanted to hear it.

The door to the seas and lands of every man's desire stood suddenly ajar.

The open doorway led first to nearly every shipyard and yacht basin from Pennsylvania to Maine. I know little about ships and sailing, for it takes years at sea to make a sailor. But it was easy to see that there are yachts and yachts, and that not many of them are fit to keep the sea.

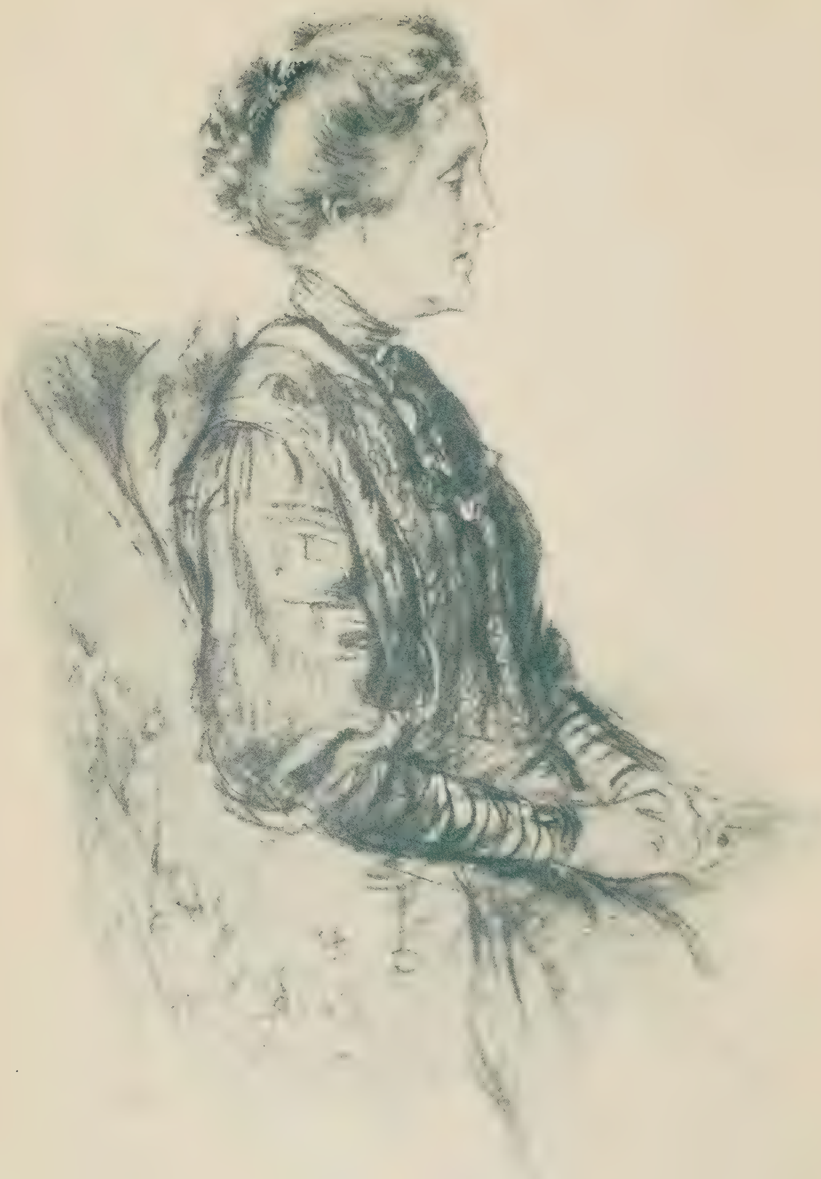
Yacht builders, yacht brokers, and yacht owners here and there called attention to vessels that would certainly have taken us gaily out of harbor, and with equal certainty would have brought us back again at the first sign of storm.

We wanted no fair weather ship, manned by the kind of crew that calls it hard luck to be out at sea all night. Like a Ford car, our ship must take us there and bring us back.

First of all, she must be seaworthy, for I remembered a friend of mine who once prepared to take a cruise in southern waters. His schooner was a beauty. He sent her from New York to meet him at some southern port, and that was the last he ever saw of her. She was lost with all hands in rounding Hatteras.

The *Mary Pinchot*

The best thing I could hope from any vessel was that she would turn out to be the kind of a ship that my mother was a woman



I NAMED THE SHIP AFTER MY MOTHER

Our ship must be able. She must have reserve buoyancy in plenty. She must be fairly dry, and, if possible, more than fairly easy in a seaway. She must lie to safely in heavy weather, and must have draft enough to give her a solid hold on the water. She should be reasonably fast under sail, but that was a secondary consideration. Speed must come after safety.

She must have an engine and fuel enough to run it for at least 3,000 miles. She must carry provisions for four months. She must carry fresh water in her tanks for sixty days, and an apparatus for distilling salt water into fresh large enough to keep the whole ship's company in health if the water in her tanks leaked or went bad.

Finally, she must be big enough to take the three Pinchots, Giff's chum at school, a physician, and three scientific men and their equipment, in addition to the captain and the crew.

For this was to be no mere yachting trip. It was not even to be merely an adventure trip, although it has been said that "the highest duty of man is to undertake adventures." It was to be a scientific expedition, for adventure seasoned with science is the very best kind.

Months went by before the ship was found. She was the *Cutty Sark*, and before that the *Ariadne*, built in Wilmington in 1902, a three-masted topsail schooner of 250 tons gross and 120 tons net, 148 feet over all, 110 feet waterline, and 16 feet draft. She was of steel construction, very heavily built, in perfect condition, and her ballast was forty tons of lead poured into her keel.

The engine room, with its brand new 300-horsepower Diesel and plentiful auxiliary machinery, was in the hold.

Five staterooms opened into the officers' mess, forward of which was the galley, and forward of that again the forecastle with the chain locker and berths for twelve men.

There were four double cabins aft, one of which would serve as wireless room and photographic laboratory, and one single cabin for whoever would be lucky enough to get it. The main cabin, twelve feet by twenty-six feet, was our general workroom, and two balanced swinging tables on the starboard side made it a dining room as well.

Our ship was very much bigger inside than you would have imagined from looking at her.

As soon as we saw her and learned her history and had looked her over, Mrs. Pinchot and I knew we wanted her so badly that we couldn't wait for the mail but telephoned an offer to the agent from a hot dog stand on our way home.

Once she was mine I named her after my Mother. The best thing we could hope from any vessel was that she would turn out to be the kind of a ship that Mary Pinchot was a woman.

Then followed many busy months while she was being reëngined and refitted for our purpose. Her rigging must be gone over foot by foot, her spars and masts examined for possible defects, new sails bought and bent, and new boats provided, for the small boat equipment of ordinary yachting was anything but what we required.

The bronze and mahogany launch was replaced by a Seabright dory twenty-two feet long by seven feet wide, built for the trip and engined with a twenty-horsepower Kermath motor. The lifeboat of the *Cutty Sark* we kept on the *Mary Pinchot*, for it was first-class in every way. We added a whaleboat built at New Bedford by Captain Beetle, the oldest builder of whaleboats who still survives. Copper fastened and of half-inch native white cedar, from the lion's tongue in the stern to the clumsy cleat in the bow, she was built and rigged like a regulation whaleboat, except that she was only twenty-two feet long.

A nest of three skiffs, the inner one with a glass bottom, and an eighteen-foot sponson canoe, canvas covered, gave us our total of seven boats.

The last part of getting ready my diary refers to as "three weeks of unmitigated hades," which is a good deal of an understatement, as any amateur well knows who ever got a vessel ready for sea.

This trip had been talked about so much for so many years that I knew pretty well what I wanted to do and where I wanted to go. Its developments from a boy's adventure into a cruise with a purpose was inevitable, first of all because such a voyage involved altogether too much money to be spent just for a good time; and secondly, because the trip would be ten times as interesting with a definite object in view.

As a boy, for six or seven years I had done little or nothing out of school hours but collect insects, and the collecting habit is a hard one to break. So I got in touch with the National Museum at Washington, which welcomed my proposal to collect for it and most generously coöperated.

The Museum not only furnished us most valuable collecting equipment and gave us long and careful lists of specimens it needed from the islands we were going to visit, but it even presented us with printed labels to put on them. The labels read, "Pinchot South Sea Expedition—1929." I got a tremendous kick out of that.

The U. S. Biological Survey came in also in the person of Doctor A. K. Fisher, an old-time friend and one of the few naturalists whose interest covers the whole field of birds, animals, and plants. He had been a member of the famous Death Valley Expedition. Back in 1908, when one of my unsuccessful efforts to make this South Sea trip was under way, Doctor Fisher had agreed to go along. A twenty-years' wait found him still keen. This time the expedition and he were actually going to go.

C. B.'s seagoing rig was to cause the natives some surprise

The substitute who went to the South Seas

Some of the men who handled the *Mary*. From left to right: Sparks, Mert, Bish, the First Mate, Nelson, Jerry, the Captain, Bud, Pete, Torp, Fritz

The Philadelphia Academy of Natural Sciences was with us in the small, modest, and cheerful shape of Doctor Henry A. Pilsbry, one of the foremost living conchologists. None of us suspected, when we first saw him, what dynamite was concealed in that small package, or that we were in the presence of a great outdoor man, who, at the age of sixty-six, would have to be restrained from walking the legs off the whole ship's company on every island where we touched.

There was also Doctor Howard H. Cleaves, ornithologist and naturalist-photographer, to whose good eye and gluttony for work the illustrations in this book are almost wholly due. Doctor Cleaves was another vigorous woodsman with the woodsman's enormous patience, and what he went after in the way of pictures, that he got.

Our heavy percentage of doctors was completed by Doctor J. B. Mathewson, the ship's physician, who treated with complete success everything from hookworm to halitosis, from toothache to a broken toe, and by his example taught us to laugh off the attacks of seasickness which descended on one or another of us during the whole voyage.

With a ship so filled with doctors, some way of telling them apart in moments of storm and stress had to be devised. So we called Doctor Fisher "A. K." from his initials; Doctor Pilsbry we named "Prof" for Professor (I suppose because he looked like one); Doctor Mathewson we called The Doctor, from his medical attributes; and, invention being by that time exhausted, we just called Doctor Cleaves by his last name.

They all accepted these titles, and you will find the assorted doctors answering politely to them in the following pages.

Young Gifford, of course, was "Giff," and his roommate, Steve Stahlnecker, had answered to the name of "Stiff" since Giff and Stiff were babies together.

Mrs. Pinchot, perhaps the ablest-bodied seaman of them all, was variously known by my own special name for her, and as "Mrs. Pinchot," and "Mother." But in this narrative she appears under the initials of her maiden name, Cornelia Bryce, to wit, "C. B."

Harry A. Slattery, my associate in conservation work for many years, was our shipmate as far as Panama. He slept without a murmur on a transom in the cabin for lack of a better place.

The people who wanted to go with us were by no means limited to the representatives of scientific institutions. When the news got around that we were going to the South Seas in a schooner, it appeared that most of the rest of the population wanted to go too.

Letters began to pour in to the tune of "Take me with you when you go."

The majority of the writers were ready to go "in any capacity." There were dozens of letters like this one:

> "I do not drink and have good habits and am very glad to say can be relied upon.
>
> "If you think the above qualifications can be used in your wonderful venture, please let me hear from you. . . ."

From their own admissions, many irreproachable young men were at large in this great country. "Albert" wrote:

> "A thought came to my mind that maybe you could make use of a young man twenty years of age, a graduate of high school, and who has a great desire to learn.
>
> "I am a young man of good character, good clean habits, and enjoying the best of health.
>
> "Trusting to luck that there may be some task for me to do, I would be a very happy young man, if I were notified or to hear from you that I am to make the trip."

"Percy" from Ohio made me wish I could take him:

> "I am a boy of nineteen and I also would like to realize a trip to the South Seas, but have no way of doing so unless you are kind enough to help me to do so. So I am writing to you, to see if by any possible chance, I could work my passage, so that I could also visit the South Seas."

So did many another youngster eager to see the world:

> "I have read of your plans for a South Sea voyage," wrote an 18-year-old Boy Scout, "and so with my pen in my hand and my heart in my throat I have worked up enough courage to write this letter to you. I hope you will not think I

> am brazen or smart. . . . you cannot imagine the yearning I had to accompany you. . . .
>
> "Mr. Pinchot, my proposition is this—if you can find a position of any kind on your ship for me I shall do all that I possibly can to repay you.
>
> "You will find that I shall be willing to do anything from shooting mosquitoes to lassoing whales to show my gratitude and to pay my passage."

Very much in contrast to this outburst of a hopeful lad was one from a man to whom I had offered a job on the ship:

> "I hardly know what to say to you. If it was a job on the coast I would be very glad of the offer, but a job at sea for that length of time would be an untold hardship for a cook."

One chap wanted to go as my personal "Body Guard." An application came in from a taxidermist with a suppressed desire for high adventure. One admittedly "high class gentleman" wanted very much to go. One who did not claim it but turned out to be just that, was the only volunteer we took along. He washed dishes on the trip and made the woodcuts which adorn this volume—Lawrence N. Taylor of Haverford, Pennsylvania.

Not a few women asked to come along. One of them touched C. B. and me quite deeply:

> "I am just now much unsettled, due to having lived for many years with my 88-year-old father, who died recently, and left me—not alone—but

> left me so that I don't know just what to do. Perhaps there may be an opening for me.
>
> ". . . I'm 49 years old, have good health, and am quiet and unassuming by nature—always had a desire to travel, can sew and do all manner of housework, etc. I dare say I am perfectly honest, if any of us are really and truly that—anyway I can't lie. . . .
>
> "So there now, I have written. How do you like my nerve?"

A lady from Texas was even willing to marry me if I would take her along. She sent me her photograph standing in front of the house she lived in. I was well and favorably impressed by the house, but I rather hesitated to swap C. B. for a lady to whom I had never been introduced.

At one time C. B. herself was not so very sure that she wanted to go. Confinement in so small a space seemed likely to disagree with her vividly active body and mind, but in the event she grew to love the cruise almost as much as I did.

Giff and Stiff were in continual ecstacy. Indeed, any ship getting ready to sail is a sort of paradise for a small boy. Everything on board was their business. Everything that went on they knew all about, and everything pleased them down to the ground. They wallowed in delight.

At last the great day came. The *Mary Pinchot* was rechristened, reëngined, fueled, provisioned, newly equipped with wireless and ice machine, and in all respects ready for sea.

If glory can blaze in a cold wet rain on a sloppy dock and a sloppier deck, it blazed when we made our start. It was the last day of March, and March was not going out like a lamb.

Friends and relations of most of us thronged the pier, not a few of them under the general impression that this was to be our last appearance in the haunts of men. Two dozen movie cameras recorded our start, while a couple of talkie outfits required speech after speech from Mrs. Pinchot, from me, and even from Giff, to tell why we were going, and where, what was a Sea Bat, and would my dream come true.

Altogether it amounted to a considerable set of circumstances. But finally the last rope was cast loose and the last hand raised, and we were off.

That is to say, we were almost off, for the ice machine decided otherwise. And when we had to crawl back to the dock in the falling darkness to give the shipyard one more wasted chance to fix it, I felt like nothing so much as a fugitive from justice. I knew enough about newspapermen to be sure I could never keep them from discovering our ignominious whereabouts. They did, and they put it in the paper.

But tomorrow would be another day.

In the warm sunny afternoon of the next day, with the ice machine behaving and horsemen practicing polo on the shore as we passed by, we were off—down the Ambrose Channel, past the Scotland Light Ship, then through an incredible multitude of tin cans, empty bottles, and burnt out electric light bulbs floating all over the sea. They were some of New York's garbage that could swim.

Giff and Stiff promptly opened fire on them, and the Battle of the Tin Cans was successfully won—with not a casualty on our side.

That night the wind was dead ahead and it was rough. The Captain swung the ship off her course for a while to keep us from rolling out of our berths. Next morning two storm warnings came in, and by ten o'clock it was blowing half a gale; by one o'clock, a whole gale from the southwest. The *Mary* was jumping up and down in the same hole and probably not making over three knots.

Still we were deeply pleased with her, for with a full gale ahead she was throwing almost no water and her motion was as easy as an old shoe.

This morning we saw that the boats had provisions and water, and life lines were run along the rails. Of the party aft no one was seasick. My diary says, "Giff is very proud that three sailors were sick but he was not."

The gale we got was only the fringes of a real blow that passed over New York soon after we left it. Our friends thought we were having a dreadful time, but life on the ocean wave was altogether satisfactory aboard the *Mary Pinchot.*

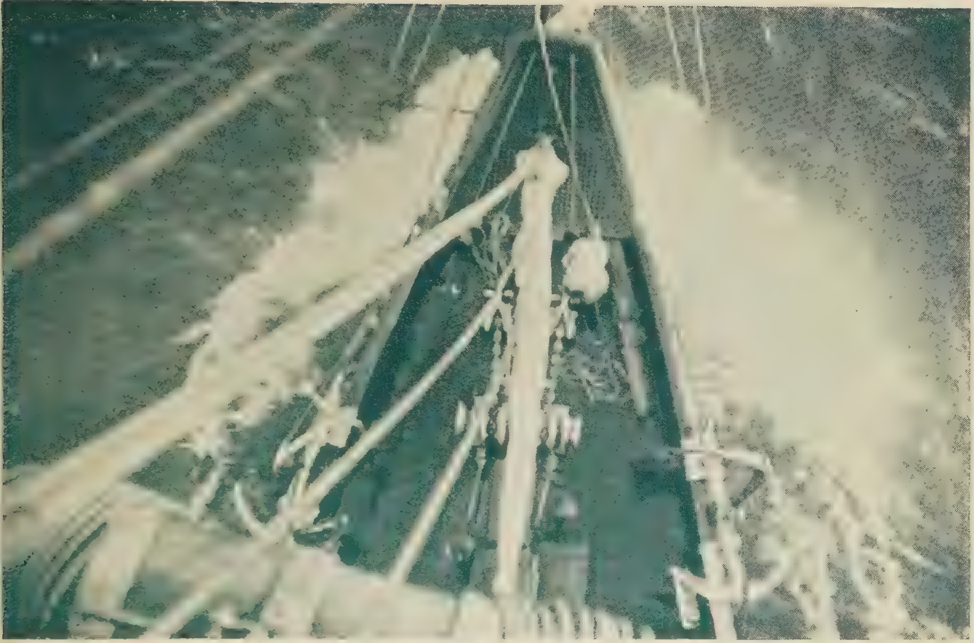
Off the Carolina coast we began to have visitors. A Cowbird came on deck, unwisely flew off again, was pursued by Gulls, knocked down, and eaten up. All because he lacked a social sense.

A Vesper Sparrow flew toward us, fell into the sea, but after a few seconds managed to rise again and reach the ship. In an hour or so she grew so tame that we could touch her. She walked around among us, ate and drank, and preened and dried her feathers in a five-inch space between my feet. When her strength came back she left us for the shore, taking all our good wishes with her.

A Fish Hawk lit on the harpooning pulpit in the bow, spread out its wings and faced ahead—surely a good omen for a scientific fishing trip.

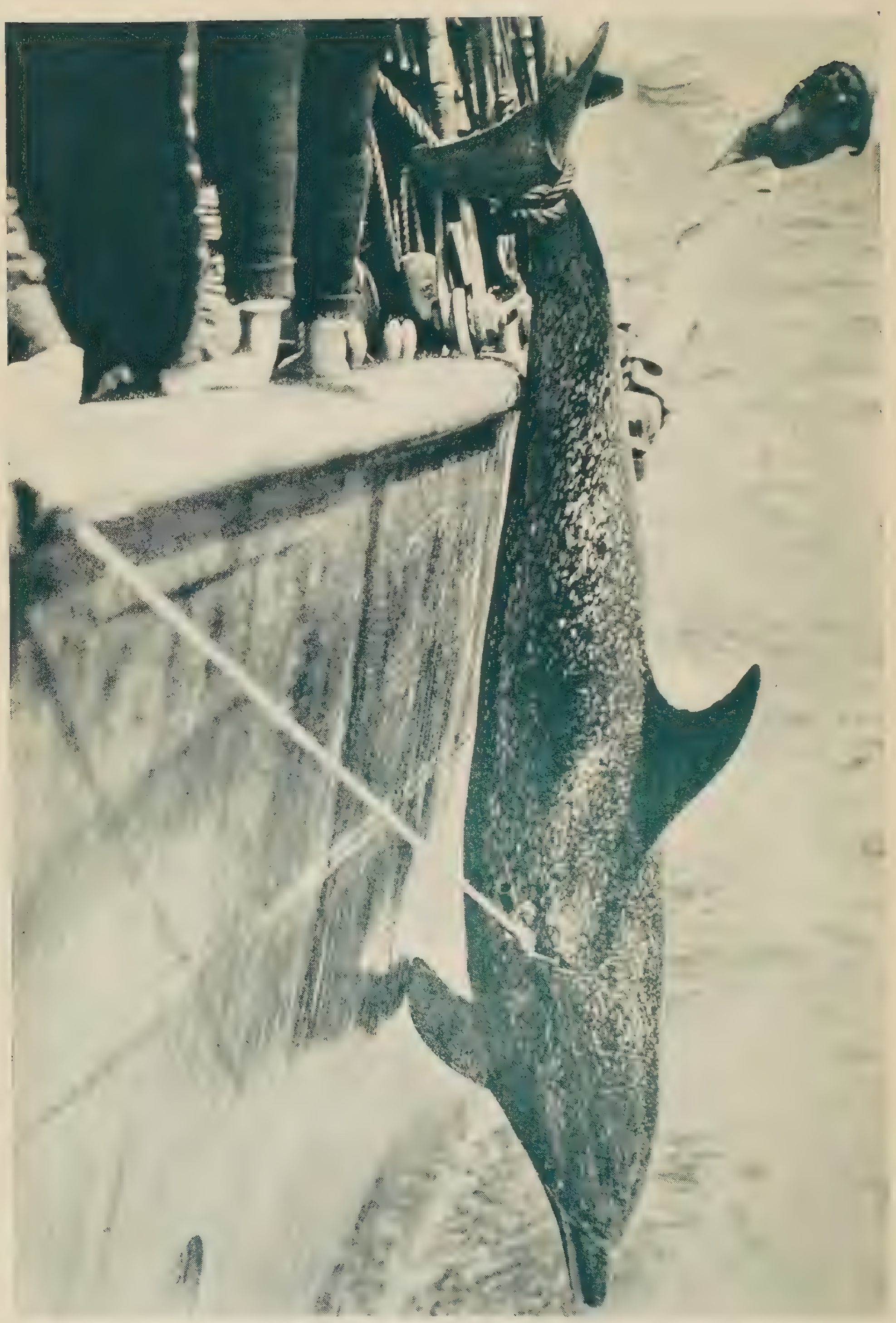
We rounded Hatteras in fair weather, and saw the line between the brilliant blue Gulf Stream full of gulf weed and the muddy looking grayish shore water as clearly defined as that between the sidewalk and the roadway in a street.

And then, on April 3, our collecting began. Porpoises came about the *Mary* in the early morning. By great good luck we harpooned one. We stopped the engine and swung the ship while it made off at immense speed, taking out nearly a quarter of a mile of line. Giff shot it twice with his 38 revolver, and then we measured and photographed it and cut it up, saving the skull and pieces of the skin for the National Museum, and the tenderloins and part of the liver for ourselves. The liver, cut thick and not overcooked, was extremely good. I ate a lot of it.



THE *MARY PINCHOT* DIGS HER NOSE INTO A HEAD GALE

PROF AND GIFF WERE THE FIRST OF THE AFTERGUARD TO TAKE THEIR TRICK AT THE WHEEL



OUR FIRST PORPOISE AND THE HARPOON THAT STARTED IT ON ITS WAY TO THE NATIONAL MUSEUM

This Porpoise was of a long-beaked species by the name of *Prodelphinis plagiodon.* It weighed 283 pounds, and was more than seven feet long. The color was a beautiful mottling of warship gray and white. Later we found the National Museum was particularly glad to have it.

We of the afterguard began to take our tricks at the wheel, and Giff and Stiff were up in the crow's nest much of their time, where I joined them in spite of the pitching.

This was the time of settling down. Harry Slattery put the library in shape (we had many hundred books) and posted a notice that officers and members of the crew were invited to make use of it. Weak points in our equipment were hunted out, and the habit of a hose bath in the morning, when the decks were washed down, spread rapidly.

It was good and warm, and life was getting easy. Time for something to happen. It happened.

When we were off the coast of Florida, in plain sight of some of the huge hotels the boom had built there, and directly opposite Cape Canaveral, in the bright sunny weather, visibility excellent, the Captain suddenly discovered he was too close to a shoal marked on the chart. He seized the wheel, swung the ship at right angles to her course, and ran us squarely on top of it.

Instantly the Captain shut down the engine and asked me to get the whaleboat ready. The swell bumped the ship hard three or four times on the sand bar. Like the epitaph in the story, if our cruise was to be so promptly done for, I wondered what it was begun for. But with the signal for full speed ahead the *Mary* slipped off into deeper water.

We thought that incident was closed—but was it? Later we discovered that the bumping had thrown the engine out of line, which led to the freezing of a piston, which led to the smashing of the crank case, which delayed us a month at the Canal. It also led to the return of the Captain who was responsible to other spheres of usefulness, if any.

It was a glorious morning when we slipped into Key West, where C. B. joined us after scaring Giff and me out of several years' growth by the report (false, thank Heaven!) that she had poisoned herself by taking hair tonic in mistake for indigestion medicine.

Leaks discovered in the deck and other minor repairs kept us at Key West for several days, until finally we were ready to leave our native land for foreign parts.

This was our real start.

II

THE SPANISH MAIN

OUR first jump was only to Havana, in whose bottle-neck harbor (highly significant name!) we anchored near the spot where the *Maine* went down. There we spent an afternoon as tourists seeing sights—the old Cathedral, in which Columbus' bones are said to have been buried, the open country with its thatched cabins and dirt roads, and whatever else there was to see.

Descriptions of Morro Castle and the narrow streets and the bodegas may be found in any guide-book. But not in this book.

As we left it next morning, Havana was like a city of the Arabian Nights. Unreal, ethereal, its color a pale yellow in the dawn, with a delicate mistiness thrown over it, it was like a city not built with hands.

At breakfast the Captain stuck his head into the cabin and cried, "Whales!" Not only Whales but Sperm Whales—a little pod of four or five with their vertical foreheads and forward-pointing spouts. They were playing when we came on deck. Several times they lob-tailed, and one came almost altogether out of water.

We circled about two that were lying together blowing quietly a few hundred yards away. They looked like huge black logs with a burl at one end and the gray scar of a broken branch at the other—dorsal fin and spout hole. Eventually they felt our presence—perhaps heard the distant beat of our screw—and moved on. While the Whales were about, we passed a six- or eight-hundred-pound Hammerhead Shark.

All that calm and lovely day we coasted the north shore of Cuba, in full sight of high rugged mountains which Prof, who had climbed them, declared were decidedly more rugged than they seemed. A pair of Man-o'-War Hawks followed us, one of which swooped for a Flying Fish at the same time that a Dolphin leaped for it from the water. Down somebody's throat seemed the only place that small fish had to go.

We rounded Cape San Antonio at the west end of Cuba—a most unimpressive promontory—and then headed for Grand Cayman, with the accent on the "man." The Caribbean is no mill pond, and not a few meals were lost before we came to anchor in the roadstead off George Town, its capital.

It was rough as we ran up the flag for a pilot. Soon we saw a tiny sailboat coming out. It was a dugout canoe not over fifteen feet long, not very much wider than an ordinary tea tray, of a beautiful model with a deep keel. It had two men in it, one of whom bailed steadily with a coconut shell, and it was about a third full of water most of the time.

THE HAPPY-GO-LUCKY BISH

JERRY, THE ABLE SEAMAN

BUD, THE LAUNCHMAN

ZUMBACH, THE COOK

Bourget, the second mate

Torp, the perfect steward

Larry Taylor, artist-dishwasher

Bill, the oiler

To come out through the sea that was running to us seemed suicide, but for the men in that little canoe it was all in the day's work.

Grand Cayman is a coral island, so completely and solidly coral that plows and harrows, and even spades and hoes, play no part in cultivating it. The only agricultural tool is a machete, and the crops are mainly coconuts (nearly all of which were ruined by a recent hurricane) and fruits.

The Grand Caymanians were good to us. Mrs. Hutchings gave us tea. Commissioner Hutchings gave us his courteous assistance and permission to collect, whereof A. K. and Prof made instant use.

A. K. collected the wild parrots which were climbing about the trees very much as tame parrots do in the zoo, and twenty-five other species of birds, while Prof found a number of land snails new to science. My contribution was certain small fresh-water fish in the municipal water supply of Bodden Town, which consisted of a hole dug in the coral, wherein the Boddentonians dipped their pails.

Now a peaceful British dependency attached to Jamaica, Grand Cayman used to be a favorite resort of pirates. Then it was used as a base from which the buccaneers could sweep out on Spanish treasure ships coming up the Yucatan Channel on their way to old Spain with treasures of gold and jewels from the Spanish Main. But we found it the abode of peace presided over by a conscientious British official.

Of the pirates who frequented the Cayman Islands, Captain Henry Morgan was the best known. They are still hunting for his treasure, and occasionally they seem to find some. One American has organized a corps of Jamaican negroes who systematically dig for pirate loot. To Harry Slattery he showed some of the gold coins he had found, and several of us saw the diggings where he found them.

Our next stop was at the island nobody owns except a man from Boston. He collects Swan Island's coconuts. Honduras asserts its sovereignty. The United States occupied it for a wireless station during the World War and claims it now, while the United Fruit Company still maintains a weather service there during the hurricane season. Some of the worst hurricanes the world can show are born in this region.

We were trolling from the ship as we approached the island. Crowds of Boobies, all in immature plumage, undertook to appropriate the spoon. They plunged and plunged, and I could feel their sharp beaks click on the metal, but fortunately none of them were hooked. They were so tame that I touched one that flew past with the end of my short sea rod. It didn't seem to mind.

As we came to anchor in the roadstead at Swan Island, just off the great wireless towers, Captain Donald Gliddon, a Grand Caymanian, and the rest of the population, consisting of six more English subjects, raised the American flag.

Swan Island was planted with coconut trees and overrun with Iguanas—slender lizards half a man's height in length. The boys saw one they had frightened run on his two hind legs straight into the water, looking precisely like the great meat-eating dinosaur in Conan Doyle's story of "The Lost World." These Iguanas swim as well as climb, but they are not marine lizards.

In the intervals of collecting coconuts, Captain Gliddon's men and boys did their own cooking, and Swan Island was no exception to the rule that bachelor cooking is the father and mother of dyspepsia. When she landed, C. B. raised the female population up to one.

Like the Caymans, Swan Island was a resort of pirates, but nothing on it was half so interesting as Little Swan, an upheaved coral island off its eastern end. The coral rock, raised sixty or seventy feet above the water, is broken and eroded into the most fantastic gullies, fissures, holes, and points. It seemed as if we hardly made a yard a minute over and up and down its crevices and crevasses. The seaward slope was overgrown with long, pendulous cylindrical cactuses two or three inches in diameter that drooped over the cliffs in prickly rope-like lines.

Boobies and Men-o'-War Birds were breeding on the island, and both on top and around the shore Prof had good hunting.

In the still water near the shore were many purple sea fans. I dove and pulled one up, and was given the highly interesting information that because sea fans are full of little holes the poor people of the Caribbean use them as sieves. That recalled a woman in a cabin in western North Carolina years ago who told her boy to go out and cut a toothbrush off a bush.

Swan Island may be named for the Gloucester sea captain who first lived on it, or for an Admiral in the British Navy, who, with Admiral Penn, half-brother of the founder of Pennsylvania, captured Jamaica, the Cayman Islands, and the Bahamas.

One day at sea divided Swan Island from Old Providence. In the gray dawn of the morning it looked as if some of the Berkshire hills had been stolen to make an island in the Caribbean. We took to it at once.

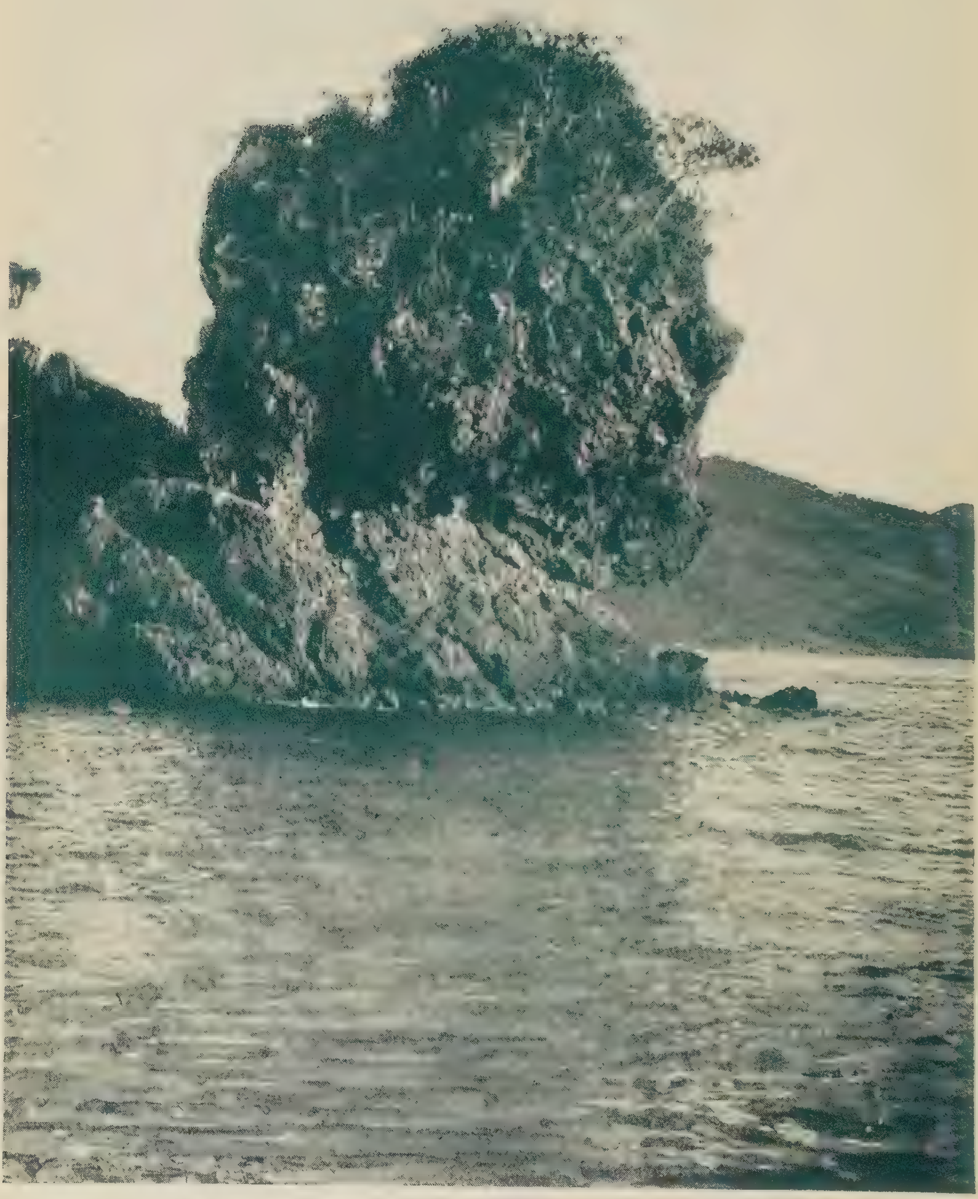
A pilot met us several miles offshore, but he turned out to be no pilot at all. He ran us aground and then it developed that he had never been at sea.

While we were still aground, a real pilot and several first citizens came aboard. They said that an American cruiser drawing twenty-two feet had gone safely into the harbor, and they took us in. Also they proposed to put the pseudo-pilot in jail for his performance—a proposal to which I cheerfully assented after he attempted to collect twenty-five dollars for running us aground. In the end I think they let him off.

Except for the poor channel into it, Old Providence is an ideal harbor, fully protected except to the west

Harry Slattery, who went back from the Canal leaving everybody sorry

The boat dock at Georgetown, Grand Cayman



MORGAN'S HEAD. NO WONDER THE SPANIARDS WERE AFRAID OF HIM (whence few winds blow), and surrounded by steep volcanic hills, one of which looks as if it had been split with a gigantic ax.

Within three hundred yards of our anchorage was one of the old forts that Morgan the buccaneer took from the Spanish. The one cannon on its crumbling walls is still fired at celebrations.

Stories of Morgan dominated the whole place, and a huge rounded lump of rock on a point is still called Morgan's Head. If Morgan looked like that, no wonder the Spaniards were afraid of him.

Captain Garcia, the Governor; John Archbold, the Alcalde; and Charles T. Hawkin, the leading citizen, treated us like long-lost brothers, and showed us all there was to see. But they took us for no rides in automobiles, for there isn't a wheeled vehicle on the island nor a road built for wheels. The people ride horses or walk.

One of the first finds on Old Providence was a very pretty tree snail, white or buff banded, with a pink tip, found in thickets on the mountains. It prefers to live on an acacia having stout thorns in pairs, and locally known as "cockspur." These thorns are hollowed out and tenanted by ants similar to those described by Belt in *A Naturalist in Nicaragua.* At the slightest touch in reaching for snails the ants came boiling out, biting and stinging furiously. I tried it.

In the ravines around High Peak and Split Hill Prof found two interesting species of snails forming a new genus. Prof generously called one of them *Giffordius corneliae*, which being interpreted is "Cornelia's Gifford," a fact which I gladly admit, and the other *G. pinchoti*. They are viviparous snails; all of their relatives live farther north, and are oviparous.

Doctor Stejneger of the National Museum says: "I was particularly glad to get the Old Providence specimens, especially the frog. The existence of such a creature on that little island was known, for the National Museum received a specimen many years ago, but it was lost in the mails and its specific identity consequently remained a mystery and caused much speculation."

The exact identity of a chameleon of the genus *Anolis* found on Old Providence is still undetermined. The National Museum merely remarks that it "cannot fail to be of the greatest interest."

St. Isabelle, the principal settlement, is a town of good neighbors. Wednesdays and Saturdays are the days when everybody has fish. Ten or a dozen of their little canoes, which had been fishing behind the reef, passed us one day in the middle of the forenoon on their way back with all the fish that all the town could use.

A. K. and I, trolling with spoons in unaccustomed waters, had poor luck, although he caught a 32-pound Barracuda, thereby continuing his record of always catching the biggest fish when we two fish together.

So far as we could learn, our rods and reels were the first Old Providence had ever seen. We heard again the old warnings that such thin lines would never hold, and the old wonder when they did. If true, it was remarkable, considering the number of yachts that sail the Caribbean every winter.

We met one of the tiny canoes fishing for turtles five or six miles from land. It was only about fourteen feet long. In such a cockleshell these islanders stand up as freely in a seaway as they would at anchor in a pond. They stand not on the bottom but on the low-set thwarts.

Two men in this canoe were hunting turtles with a net fastened to an iron ring about four feet in diameter. One man used a water glass and controlled the net. The other did the rowing. When the water glass found a turtle asleep on the bottom, the boat was worked around until the net could be dropped over it. Then the panic-stricken turtle tangled itself in the net and they hauled it in. They had already in the boat a Hawksbill Turtle of about forty-five pounds, which would yield some seven dollars' worth of tortoise shell.

On the way back we ran into C. B. and the boys in a skiff on their way to find a bat cave that was a sea cave also. The name was no misnomer. Bats were there in what seemed thousands, hanging from the roof in great clusters. It must have been a risky refuge, for if a bat lost his hold he had no place to fall but into the water. Several did fall in while we were there, and they were wholly unable to get themselves out until we helped them.

C. B. went in as if bats never caught in ladies' hair (which I believe they never do). But I did find one hooked to my trouser leg when I came out.

The next island was St. Andrews, another Colombian possession, and another excellent harbor—after you get in. Once more the pilot ran us aground, and this time we stuck. We had hardly done so when the Governor, the Captain of the Port, the doctor, and whatever other Colombian officials there were came out to see us in the Governor's launch. The *Mary Pinchot*, it appeared, was the only yacht that had ever been in their harbor. They were expecting us, having been notified from St. Isabelle.

This island, like Old Providence, speaks English. But not the Governor. He came from somewhere near Bogota, and hungered to get back.

After much conversation C. B., Giff, and I went ashore in the Governor's launch, where we were met by the Governor's wife and some other ladies. They took us up a narrow stairway to the Governor's mansion, set us down in the best parlor, and turned on a record of the "Star Spangled Banner." We all stood at attention while it was played through.

Then they produced glasses of iced champagne. This looked like trouble, for in Latin countries ceremonial toasts are important. But I made a speech explaining the prohibitory law of my country, and that I must follow it as conscientiously abroad as I would at home. The Colombians luckily accepted my explanation in good spirit and drank the champagne themselves. Whereupon the Governor made a speech in Spanish and I made another in English, both advocating the most amicable relations between the two great nations we represented, to the entire satisfaction of all hearers who understood and some beholders who didn't.

Shortly after we got back to the ship that evening the rising tide, the engine, and the kedge, with all hands helping, pulled the *Mary* off the shoal, and we anchored in great contentment in deep water.

Next morning Henry Davis, a very black negro with gray hair and a remarkably kindly and attractive expression, came to take me trolling outside the reef in his sloop, built in Baltimore forty years before. With him came a ragged youngster, and a violent contrast in the shape of Gilbert Bernard, a colored man dressed in a beautifully pressed brown suit with a white collar and a stiff straw hat.

The fishing was poor, but the sea and the surf on the reef were magnificent. Bernard, who had spent eight years running a tailor shop on Bainbridge Street in Philadelphia, elaborately inquired whether he might ask some questions. I told him to fire ahead.

He said, "Who is the owner of the *Mary Pinchot?*"

I told him I was, which statement he accepted with obvious difficulty, due, I presume, to my personal appearance in fishing clothes.

Then he inquired if we had an ex-Governor on board. I told him we had. He wanted to know who that was. I told him that was G. P., which assertion was received with still more obvious doubt. Having pondered awhile, he then inquired, "Have you any ex-Presidents aboard?" That closed the conversation.

St. Andrews grows and ships coconuts by the million every year. But at present prices a man must gather, husk, load, and transport coconuts to the harbor for one cent apiece, and half of that goes for expenses.

Young Rubinstein, son of the Coconut King of the island; Anton Holgerson, a Norwegian, whose father we met on Old Providence, and who himself was the Panamanian Consul at St. Andrews, and his wife; Mrs. M. A. Dawes, a sweet-faced old lady of seventy, Bible reader and missionary; with Captain H. J. Bradley, a retired American master of ships, came on board to talk things over.

Then arrived the Governor's party, including Rubinstein père, now seventy-five years old, a hard-boiled old wanderer who had spent fifty years in South and Central America, and in the beginning had carried a pack as a peddler. He is now the richest and most influential man on the island.

There were nothing like chairs enough to seat Governor Logano with the ladies and officials of his party, so C. B. and I promptly sat down on the floor. A lot of the others followed suit, including Madame Logano herself. That broke up the formality, and from then on we had a good time.

The proudest find on St. Andrews, and one of the proudest of the trip, was made when A. K., accompanied by a policeman, shattered the peace of the island and all municipal regulations by shooting a humming bird on the main street. He escaped arrest and incarceration by instantly diverting the constabulary attention to the good shot he made, and had his reward when his prize turned out to be a new subspecies to which Dr. Wetmore most kindly gave my name—*Anthracothorax violicauda pinchoti*.

As we left the harbor that evening, just ahead of us went the *Lizzie D. Peabody*, a stubby gasoline schooner, with nothing remarkable about her but this: She was built by Captain Flynn, the last commander of the *Cutty Sark* before I bought her, and she was named for a girl in Portland, Maine, whose best young man was with us before the mast. The appropriate observation will occur to the reader without my printing it.

We hoped to reach Colon and the Canal next day in peace and quietness, but by the middle of the afternoon the *Mary* was rolling heavily in a big swell from the north. Movable articles began to crash all over the ship and books from the open bookcases strewed the floor like leaves in Vallombrosa.

Then the engine, knocked out of line off Cape Canaveral, began to be heard from. At ten o'clock that night it went definitely to pieces—so definitely that the Chief reported it would never run again.

Whereupon, as we lay rolling helpless in the calm and swell, a great English steamship came up behind, headed directly for us. We saw her miles away, and thought she must see us, but at a mile, half a mile, and a quarter of a mile she was pointing directly for us. Long before that we sounded our whistle, threw our searchlight on the spars and sails, and did everything to attract her attention. Still she came on as if she meant to cut us down.

Finally Sparks succeeded in talking to her wireless man, and just in time she sheered off. They told us afterward they recognized us and wanted to give their passengers a chance to look us over. Whatever they gave their passengers, what they gave us was a thorough scare.

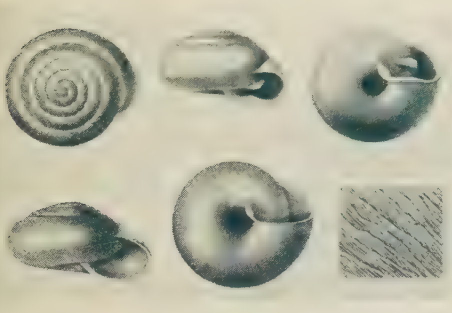
It took us a month at Cristobal, with the kindliest coöperation of Governor Burgess, Port Captain Kidd, and the Canal officials, to repair our engine, but when the job was done it was like new. It would take pages to acknowledge all the kindness we were shown at the Canal.

Meantime I went Tarpon fishing on the apron of the great dam at Gatun with Bill Markham, the best-known Tarpon fisherman on the Isthmus, who catches his Tarpon with a fly designed by Markham and made

Little Swan Island. A hard road to travel

Prof discovered a new snail at Old Providence and named it *Drymæus pinchoti*

The Pink-tipped Tree Snail (*Drymæus pinchoti*) prefers to live on the acacia, in whose hollow thorns stinging ants make their home



Giffordius pinchoti, upper, and *Giffordius corneliæ*, lower

San Blas villagers seldom have visitors

These Indians make sea walls around their houses with pressed-out sugar cane by Markham's fingers. He and I come from towns not far apart in Pennsylvania, and it took us no time at all to fraternize.

Bill Markham has many friends among the San Blas Indians, that marvelous tribe of little men which has for centuries preserved the purity of its blood inviolate and still permits no white man to settle among its villages. He gave me a document of introduction to an important San Blas Chief. It consisted simply of a photograph of Markham and the Chief standing together—perfect for its purpose, when you come to think of it.

The first stop out of Colon was Porto Bello, the old Spanish fortified harbor where el Camino del Oro—the road of gold—over which the treasures of the Incas passed from the Pacific to the Atlantic on their way to Spain, reached the salt water on the hither side. The fortifications remain in almost perfect preservation, with the guns in the grass before their ports, and many other memorials of old Spain.

But we were not there merely to see sights. Specimens were what we wanted. An old Jamaican negro who was helping us by carrying a camera said of Prof, "There's the Professor looking for something he never lost." That described us exactly.

Next morning at daylight we were off Cape San Blas. The official launch of the Panamanian Intendente came out to look us over, and with evident reluctance gave us the right to visit some of the San

Blas villages. But not the Carti Islands, where Markham's friend lived, because that port had been closed on the ground that the Indians were not safe. We knew better, but there was nothing we could do about it.

The San Blas Indians live on little islands raised but a few feet above the water. In the matter of congestion the most crowded districts of lower New York have little to brag of in comparison. The little houses of the Indians, cane-sided and thatch-roofed, are set so close together that in many of the streets between I had to bow my head below the eaves and turn my shoulders sidewise to get through.

There is more room indoors than outdoors. The usual hut is rather small, but each village has its community house, a single room perhaps twenty by twenty-five feet. It is a kind of clubhouse for the men and a gathering place for all hands when strangers come to town. Church services are held here occasionally, and a sort of village council meets every night, where the old men impart wisdom, the strong men speak their minds, and the affairs of the community are discussed and decided.

In one such house I had great fun giving away a pailful of hard candy. For the rest of that afternoon we found youngsters feasting on it in every crack and cranny of the town.

San Blas furniture consists of small wooden one-piece benches, legs and all made of a single block of wood, calabashes for water, hammocks to sleep in, and fireplaces where six or eight logs laid star-shape, with their ends together, serve the same ends as a modern electric stove.

The men were short, chunky, notably powerful, and often naked to the waist; the women heavily built, well developed, and fully clothed. Through every feminine nose, young and old, was a sort of three-sided gold ring.

The women had a real objection to having their pictures taken, but a dollar was usually potent to remove it. Sometimes, but not often, the price dropped as low as a dime.

The San Blasians quickly discovered they were welcome aboard, and throughout the day the *Mary Pinchot* was thronged with visitors. We let them come and stay, as many as would and as long as they would, in marked contrast to some other yachts which had permitted only two or three aboard at once, and not for very long. The result was great friendliness toward us and a real chance to get acquainted.

After supper the first night a white Indian came aboard. He was a cordial but very unpleasant looking albino, much the color of a white man who had lived in a darkened room. His hair was a dull red, his eyes light blue. He was one of those from whom the widely circulated legend grew that a race of white Indians had been discovered on the Isthmus of

Panama. Later we found a brown mother with a white child. For once there was a baby C. B. did not want to hold.

Late that night Cleaves waked me up to see Bats catching fish by the boat boom light. This sounds like a fairy tale, but here is what we saw:

There was no wind and the water was still as a floor. Many little fish were breaking the surface. Large Bats, about eighteen inches across the wings, were flying all about. Every now and then one of them would sweep along the surface at high speed, leaving a long straight wake where its tail, edged with wing membrane and curved into a scoop, swept up the water, and I suppose swept up the little fishes with it. That at least is what it looked like, and that is what the books say these Bats do. When I first saw it I did not believe it myself.

Next morning when I came on deck the anchor watch showed me the head of a Shark which must have been eight or ten feet long, for the jaws were well over a foot wide. He had found it caught on a Shark hook at two o'clock that morning, had pulled it in, had seen it alive, and had turned the line loose with the Shark on it when some duty called him off for about ten minutes. When he came back nothing was left but the head, and that chewed off just behind the jaws.

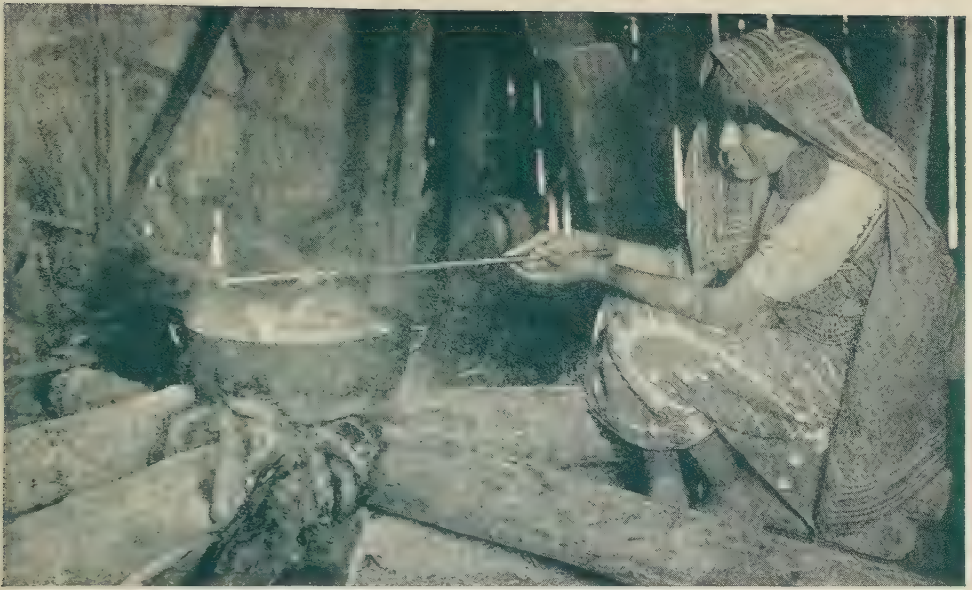
There were many small tooth holes in the skin of the head, but no large ones. Probably the Shark was cut to pieces by a school of little Sharks.

The San Blas women are experts in canoes and use as heavy a paddle as the men

The First Mate, our best navigator, shooting the sun

A HOUSE ON THE ISLAND, A FARM ON THE MAINLAND, AND A BOAT TO GO BETWEEN MAKE A SAN BLAS DAY

MODESTY IS THE BEST POLICY AMONG THE SAN BLAS. IT COSTS A DOLLAR TO TAKE A PICTURE



A San Blas chef and the range she cooks on

Indian and Caucasian look each other over

Nothing is easier than giving candy to San Blas children

The nose ring is the San Blas sign of feminine appeal

Boys wear neither nose ring nor anything else

Among the San Blas we made many rapid friendships. Philip Hawkin, whose Indian name was Chipi, was our pilot. Jim Borden, locally known as Charley, helped us to get photographs. And Jake, an ancient chief, sent for me and made me presents, which I returned in quantity but not in kind.

The ship looked like a country fair. Fruits of all sorts, necklaces of parrot beaks, dog teeth, and shells, fish spears cut from files, beautiful spear handles of black palm, and whatever else the Indians had to sell.

The night before we left, the ship was crowded with Indians. Mr. R. R. Beardsley, Superintendent of the Mandinga Banana Plantation, who had come aboard with his wife and child to take supper with us, asked if we would like to see an Indian dance. Partly because of his own influence with the San Blas, partly because they had become so friendly, he succeeded in producing it.

This dance is seldom given before strangers and never given except at night. Before they would start, the Indians required us to put out the electric lights on deck. We saw what went on only by the reflection of the searchlight thrown on the spars.

The dancers were four men. They stood in a circle facing inward. The dance was swift. They moved forward, curtsied with one leg far out behind, moved back again, changed places, and repeated. Each man played on a sort of pan pipes made of four reeds. Its music was a monotonous repetition of a few notes.

Then two men alone did a slightly different dance, blowing on their pan pipes as before.

Cleaves suggested taking movies in the light of flares, and Beardsley, to my surprise and delight, arranged that also. At the end Cleaves moved the flares quite close, and the dance ended when a spark stuck inside the waistband of one of the dancers.

These were undoubtedly the first movies ever made of this dance. It ended and the evening broke up in a burst of friendliness all around.

A most magnificent sunrise was in preparation when we came on deck next morning. Most of the horizon line was piled high with dark clouds, but the East was a perfect blaze of glory. In the early dawn the silhouette of the mainland mountains was hard and sharp, but the sun had hardly passed the horizon when a great blanket of clouds, white like a snowfield, began to hide the summits of the range.

That sight drew me like a magnet. It made me wish intensely I might penetrate the interior and see this land close by. Some of the peaks and ridges of the mountains that we saw so clearly, and apparently so near at hand, had, I suppose, never been visited by white men since the world began.

As the dawn lightened, one cayuca and another glided by. Then thick and fast they came at last, mostly under sail and most of them full of calabashes. They were headed for the mainland to cultivate their little farms and to bring back wood and water and other supplies. It was their daily pilgrimage.

Later that day, Beardsley took us to his banana plantation and made us see that growing, cutting, and marketing bananas is something like a fine art.

Bananas are planted in squares sixteen feet apart. They spring from a sort of bulb, a good deal like a lily bulb, that grows at the foot of the main trunk which is cut down at the end of each year. A banana plant grows but one stem or bunch of fruit, which may have from six to a dozen "hands" of bananas on it, and more than one hundred individual fruits.

The stems of bananas must be cut at just the right time. They must be packed with extreme care with leafy trash gathered from about the trees, they must be handled very delicately, and when they get to market the ripening and selling are matters for experts. There is far more in a banana at a fruit stand than meets the casual eye.

When we left San Blas, Jim and the albino Indian and many others came aboard to say good-by.

Then we "transited" the Canal. What a word! But on the other hand, what an experience! The vast locks operate with the noiseless precision of a high-priced car in the hands of a high-powered salesman. There is not a loud word spoken, as great steamers slip through, and no more excitement than a maiden aunt might show in putting out the cat. As for the *Mary Pinchot*, she seemed so tiny in comparison that I almost apologized for troubling the authorities to take her through at all.

First we went through Gatun Locks, and into Gatun Lake. There are many reasons why Gatun Lake is famous, and one why it is not famous enough.

On Barro Colorado Island the Government has established a great Wild Life Refuge. To it, at Doctor Zetek's invitation, and after paying my respects to Governor Burgess, I went to spend a night.

As we approached the landing a huge scaly Cayman showed himself. When twilight fell I was deep in the woods listening to the hum of insects, the occasional grunt of a Peccary (which I could smell as well as hear), and the noise of wings as invisible birds lit in the tall trees high above.

Deep woods at night are always solemn. The solemnness of these was by no means lessened by Zetek's statement that four or five Jaguars liked the island well enough to live there. As I found my way back over the slippery steep trail I met a rescue expedition in the form of Donato the caretaker with a lantern, come to collect my hypothetical remains.

If I had been caught out all night (which I wasn't) and had slept in the hollow of a tree (which I didn't), this is how I might have dreamed of my reception:

"Oh, welcome," shouted Zetek, "to this hall,
Become a Barro Coloradical.
Calibananas wait your cultured taste.
Mangophers quickly will fill out your waist.

"Cockatoucans and toucanaries too
Will flit about and sometimes perch on you.
And darningneedlefish will kiss your hand–
And honeybeetles wait on your command.

"Mockingfishers will fill you full of fish,
Grasshoppersimmons make another dish,
While persimonkeys wait upon the table,
And kangaroosters furnish forth the stable.

"Wahoodoos never touch this blessed isle,
Wahoodlums here will greet you with a smile,
Wahinefarious persons are kept out,
While waspen trees are planted all about."

Every American can be proud of what Uncle Sam has done at the Canal. And the reason for the high standard is worth remembering. The Canal Zone is free from politics. What we have done there in honesty, efficiency, intelligence, and humanity of administration we can do anywhere else — on the same condition.

Upon which reflection, the *Mary Pinchot*, filled up with water, oil, food, ice, and whatever else she needed, passed out into the Pacific and was on her way.

III

TREASURE ISLAND

IF desert means without inhabitants, Cocos is the desert treasure island *par excellence.* More gold and precious stones are supposed to have been buried there than on any other island on earth, and some have actually been dug up.

Here the Incas are reported to have fled from the conqueror Pizarro, carrying with them countless chests of treasure. Here is supposed to be buried the golden booty of buccaneers like Woods Rogers, who, from this island as a base, harried the unfortunate Viceroys of Peru whenever they ventured out upon the deep.

We saw the island first a long way off, a mere darkening of the horizon in the dawn, then as a dim shape arising from the water, crowned with clouds.

As we came nearer, an enormous school of Porpoises came about the ship. It contributed, however, nothing to our collection, for the iron drew out from the only one I hit, and when Otis Barter shot one with a harpoon gun, the line broke and away went Porpoise and harpoon.

Seen closer, Cocos showed white surf, steep cliffs, long slender lines of waterfalls, and forests green as

Ireland in the spring. Someone remarked that Cocos lay wide open to the charge the man from Galway made against the Atlantic Ocean—it was too wet. And so we found it. The fact that it was the rainy season did not keep us any drier.

As we nosed our way into Chatham Bay, the beauty of the place was breath-taking. Near the entrance a waterfall dropped straight into the sea, while farther on, two more poured themselves into basins just behind the beach. Under the ship the clear water let us see the bottom forty or fifty feet below, while big and little fish flashed by or went sedately about their business.

On Cocos Island chlorophyll is king. The vegetation is not merely dense and vigorous—it is the master. It rules, controls, and overwhelms whatever else there is.

We saw that every rock too steep for foothold was draped in long streamers of the most graceful vines, and where there was no room for roots, lush tendrils filled the gap. Along the beach, coconut palms showed traces of former human occupation, and here and there tall trees lifted their crowns above the general level of the forest.

On the western side of the bay lay the little island of Nuez, the loveliest piece of *terra firma* I ever saw, like nothing so much as a Japanese print—or like a "mountain" of Chinese jade, if it could be covered nearly all over with a smooth deep velvet of green trees.

When we had recovered from the shock of these impressions, and could tear our eyes away from Nuez, we saw the Fairy Terns. Little white birds with curving wings, they glided, swooped, and wheeled in twos and threes across the faces of the cliffs, keeping their distances like planes in a formation, diving in long smooth curves, and rising again so gracefully, so daintily, that—well, finish the sentence for yourself.

As we landed at the head of Chatham Bay, Sharks two or three feet long were in the shallow water, seeking, like their elders and biggers, what they might devour. In front of us a solid lump of rock stood out above the boulders of the beach—one of the old bulletin boards of the sea. On it, and on the rocks about it, the crews of ships for a century at least have carved the names of their vessels.

Queen of Scots was a new recruit. A little up the strong stream that flows into the bay near by, was the name of the "*Atelia,* Captain Winship of Boston, May 1st, 1817," on a smooth sloping rock, and many others.

Henry Christensen, Chief Engineer, did not propose to let the *Mary* depart from Cocos without also leaving her visiting card on the front hall table. So, before we left, on a larger rock of the Bulletin Beach he carved her name in a breadth of style that would impress succeeding ages. For a day and a half he labored, keeping his secret well until he had cut with mallet and chisel, wide and deep far above tide, the following inscription:

YACHT
MARY PINCHOT
HON. G. PINCHOT—JUNE 7th, 1929
MILFORD, PA.
CORNELIA BRYCE PINCHOT
GIFFORD PINCHOT, JR.
H. C.

So when you go to Cocos you will see that we've been there before you.

We went ashore well armed. Even C. B. carried a rifle over her shoulder. The only hostile movement, however, occurred when one of the party stumbled over a litter of little wild pigs, caught one of them, and received such expressions of disapproval from its mother in the brush that he promptly and wisely let it go. After that we left our arsenal on board.

When advised to have his laundry done at Panama in preparation for going westward, Doctor Mathewson had announced that this was not necessary. He was going to patronize the laundry at Cocos.

This was a sort of joke much relished by the crew, and The Doctor was not allowed to forget this rash statement when the "laundry" at Cocos proved to be just the clear cold water of the stream which ran down into Chatham Bay. There The Doctor had to cope with his dozen soiled white Oxford shirts, along with many other amateur laundrymen (of whom Torp was easily the most expert) with a lava boulder for a washboard.

From exploration we turned to fishing, and the fishing that we found would have strained the powers of Ananias. Except in the great schools of Yellowtail at San Clemente in the old days, it seems to me I never saw the fish bite quite so fast. They bit faster than we could land them—big Jacks, spotted with black and blue, Bonitos, and Yellowtails; or did until the Sharks found us. After that we hooked the fish and the Sharks caught them. They swallowed them whole, and then either we cut our lines or the Sharks saved us the trouble.

The passage between Nuez Island and the mainland was a wild place when the tide was running. It was simply jammed with fish. You got a strike almost the instant your line hit the water. With the swell booming into the great cave at the south end of Nuez, the seas breaking over the point on the mainland, the fiercely fighting fish, and the Sharks, Sharks, Sharks, it was a sort of daylight nightmare.

It was at Cocos that C. B. brought the first Wahoo to gaff—an incredibly long, lean, swift fish of the mackerel tribe, whose dark body is divided by vertical stripes of lighter blue.

Shortly after her triumph with the Wahoo, C. B. hooked a sixty-three-pound Tuna between Wafer Bay and Ship Rock, and landed it.

When this Tuna struck, The Only Woman Aboard was fishing with a Coxe reel, a 24-thread line, and an exceptionally limber hickory rod. She gave the fish his head, let him run out much more than half the 500 yards of line on her reel, and used only the lightest pressure of the brake. And promptly she got her reward.

The fish wore itself out against the weight and friction of the dragging line, and in an incredibly short time was at the boat and ready to be gaffed, while the fisherwoman, instead of being exhausted from a long and punishing struggle, was as fresh as a daisy. The fight was between the fish and the line, and the angler did little more than act as referee.

This is the perfection of fishing, but it is not always possible in these waters where Sharks are as plenty as leaves on a tree.

Before C. B. landed her Tuna, big Sharks appeared around the boats. We cast off the whaleboat from the launch and Giff, Otis, and I undertook to catch one for Cleaves to photograph. We baited with a fish. A Shark snatched it, pulled the stern of the boat down in the water, and started off with us like a race horse. Otis let him get a little slack, and instantly he turned and cut the line with his teeth. I saved the end of it in proof.

That night the water was filled with reddish brown fish about a foot long, gathered in swarms around the ship for protection, while the Jacks and the Yellowtails drove through them, and the Sharks took their toll. These little fish were as good to eat as they were to look at, and there were plenty of them for us and the Sharks too.

We hung the underwater lamp over the side, and the most astonishing multitude of little creatures of the sea came swarming about it. There were so many they colored the water a deep salmon, and at times were so thick that the lamp below them was completely hidden.

Minute crabs and shrimps (A. K. ate them alive, and said he found them delicious), many of them luminous, marine worms, small fish of many kinds, some of which you could see right through, and larger fish of a dozen different kinds, the deeper down the larger—culminating in big Jacks and bigger Sharks.

Flying Fish rushed about on the surface in wild excitement, making short flights now and then, or banging head first into the side of the *Mary*, and so falling an easy prey to the dip net of the industrious Stiff, who caught a dozen of them that first night. One of them, over a foot long, spawned half a cupful of bright yellow eggs on the deck.

The two boys stood on the gangway and dipped until their arms were tired, then introduced variety by trying to grain small fish or harpoon a Shark.

Our first Shark was only seven feet long. She had white tips and tail, and furnished our first shark specimens, a piece of skin, a few teeth, and the tip of a dorsal—just enough for identification.

That night cured us all of any desire to swim in Cocos waters. We counted thirty-four Sharks in sight from the ship at one time.

Another night Cleaves photographed with flares the catching of two Sharks, one of them eight feet nine inches long, with black tips to the fins. The latter was a female. The Doctor performed a Caesarean operation and discovered four little Sharks, practically ready to be born. Two fell in the water and swam away, and one was pickled in formalin for the National Museum. The head of a Yellowtail and a big steak we had cut from a smaller Shark were in the mother's stomach. Sharks will eat Shark. This lady had been stealing fish.

Still fishing at night for Sharks was great fun, but eventually we found that trolling with a whole fish by day was even better. Then we could see the Shark follow up the bait, see the final rush and the strike, and keep the fish in sight while the fight went on.

The first of us to land on Nuez was Cleaves, who went to photograph the Fairy Terns. To that pleasant labor C. B. also went one day, and I went with her.

A big swell was running against the vertical rock, and the skiff rose and fell six or eight feet with every wave. Climbing up the rock-side was not much easier than landing.

But the Fairy Terns paid us in full for all our trouble. The woods were full of them, and they were so unruffled as they gently pecked at our intruding fingers, so altogether winsome, that it seemed worth the whole cruise just to see them at home.

There is room for argument that fairies must live on Cocos to watch over the baby Fairy Terns, for a Fairy Tern mother lays her single egg in a minute depression on the branch of a tree. The marvel of it is that such an egg does not roll off, but a greater marvel yet was to see the little chick standing where an egg had been. How on earth does a baby Tern succeed in getting out of its egg without falling out of its tree? The fairies must look after their own.

Besides the Terns, Nuez was full of Boobies in the tree tops and rats under foot. There seemed to be no other population. C. B. and I climbed to the top and counted seventy Boobies in the trees without moving from one spot.

Getting off Nuez was no easier than landing. The wet and slippery side of the island seemed like a slide as we crawled down, G. P. placing C. B.'s feet in scanty footholds, to where the rock wall fell straight into blue water. Bud was watchfully waiting below at the oars, and we made the eight-foot jump all right into the skiff.

But we hadn't get twenty feet away when along came a big Shark. It would have been just in time to assist at the obsequies if either of us had missed the boat on that jump. What a grand story Zane Grey would have made out of that!

To the southwest Wafer Bay, named after Lionel Wafer, a better kind of pirate or privateer, is even more charming than Chatham Bay. One of its waterfalls, before it drops into the cup of boulders it has made, swings at the wind's will with unimaginable grace back and forth across the vertical rock out over which it springs; and the rest is all in keeping.

In Wafer Bay A. K. collected two Man-o'-War Birds and one mature White-footed Gannet, which brought his collection of skins to date close to the 200 mark. Gannets were all over the place, and so were the Man-o'-War Birds, in thousands. Also there were many Noddy Terns, looking like soubrettes in their demure gray vests and little white caps.

From heights of fifty or even a hundred feet the Boobies (Gannets) made the most magnificent slanting dives into the water clear out of sight. It was a gallant sight. I felt somehow profoundly gratified when the Boobies dived, for they flew so close to us in the boats that we felt personally acquainted with them and proud of their performances. The Man-o'-War Birds we got to know less well, and we admired them less, for they lived by robbing the Boobies of the fruits of their spirited diving. This offended us, and moreover the Men-o'-War are far less graceful seen close by than at a distance.

At the head of this bay lived for many years Captain August Gissler and his wife, who, after much vain searching for treasure and vain attempts to colonize, went to New York, where there are more deposits of gold and precious stones than Cocos ever saw. The remains of the Gissler buildings and housekeeping lie about, including the ruins of a machine for husking coconuts.

We went to Wafer Bay for a reason. Deep in its clear water was supposed to lie the wreck of a Spanish galleon never yet explored. As a matter of fact the wreck was so far from undiscovered that it appears quite plainly on the chart. Moreover, the galleon was a modern steel ship. These are the only two points we have against the story.

The afternoon we found the wreck the tide was low, the sea was high, and the jagged points of steel ribs and beams that showed now and then in the hollow of the waves were excessively unattractive. We looked through the water glass long enough to make out the wreck distinctly, and then we left for less exciting but more wholesome parts.

About the time we left someone cried "Shark," but unemotionally, for Sharks were nothing new to us Cocotiers. But the Shark was a Manta, two Mantas, five or six Mantas, swimming in circles around and around in a heavy sea. This was news, for a Manta is a Giant Ray and Giant Rays are furiously interesting. We hurried close and looked, and then we left them undisturbed to their love-making.

Returning from Wafer Bay another afternoon, in the passage between Nuez and the mainland we ran

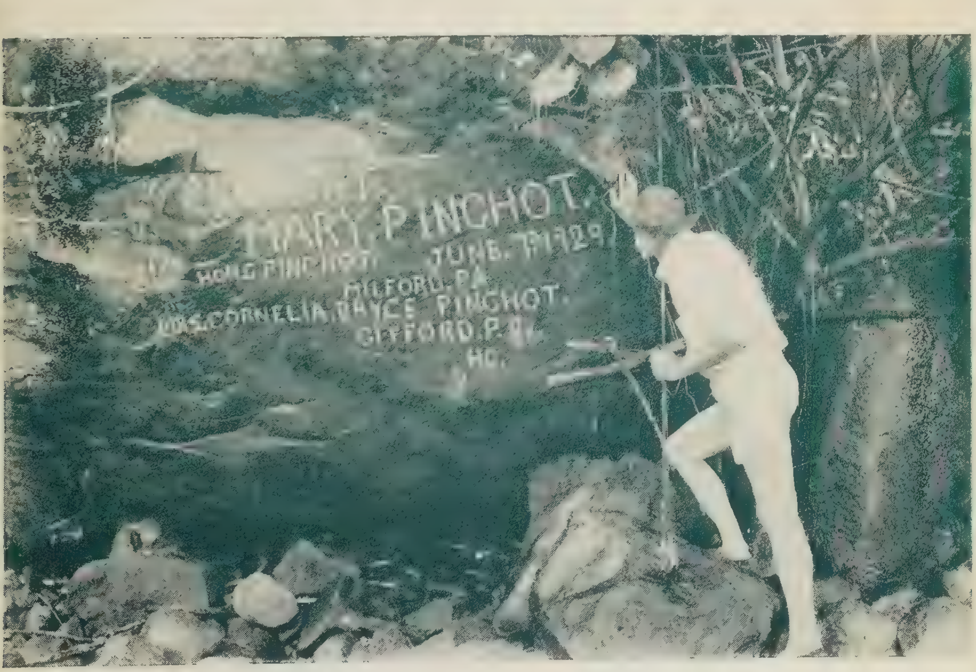
A. K. looks this porpoise over

Not even Prof knows how old is Dunc

THE FAIRY TERN HATCHES HER YOUNG ON THE BARE BRANCH OF A TREE

NODDY TERNS LOOK LIKE SOUBRETTES IN DEMURE GRAY VESTEES AND LITTLE WHITE CAPS

We went ashore, armed, at our first desert island, but never again


MARY PINCHOT.
JUNE. 7 1929
MILFORD. PA
CORNELIA BRYCE PINCHOT.
GIFFORD P.
HO.

The Chief left our visiting card to impress succeeding ages

No swimming here—too many sharks

Cocos and Nuez. More treasure is supposed to be buried here than anywhere else on earth across one of those marvelous explosions of wild life that make tame life so tame. A flock of several hundred Boobies was feeding with vast excitement on a school of fish. As the school moved, the Boobies at the rear flew after it and plunged into the water at its head so that a constant stream of diving, rising, flying, and settling birds went with the fish, while every moment lines of new birds swept into the scrimmage.

Man-o'-War Hawks flew over and bent their long necks to seize what they could from the air, while from below Jacks, Yellowtails, and other fish were smashing at the bait. Porpoises sailed through the school and the Sharks were everywhere. I felt like a cave man before the dawn of history. Also I hooked a Sailfish at this place, but he stayed with us only for a single jump.

We were at Cocos for a week. Every day it rained. In one twenty-four hours we had twenty-five showers. Sometimes rain storms succeeded each other like trains in the New York subway—under three-minute headway. We were seldom dry and never dry for long.

It rained so much we never dug for treasure after all. Which might or might not have been a serious mistake.

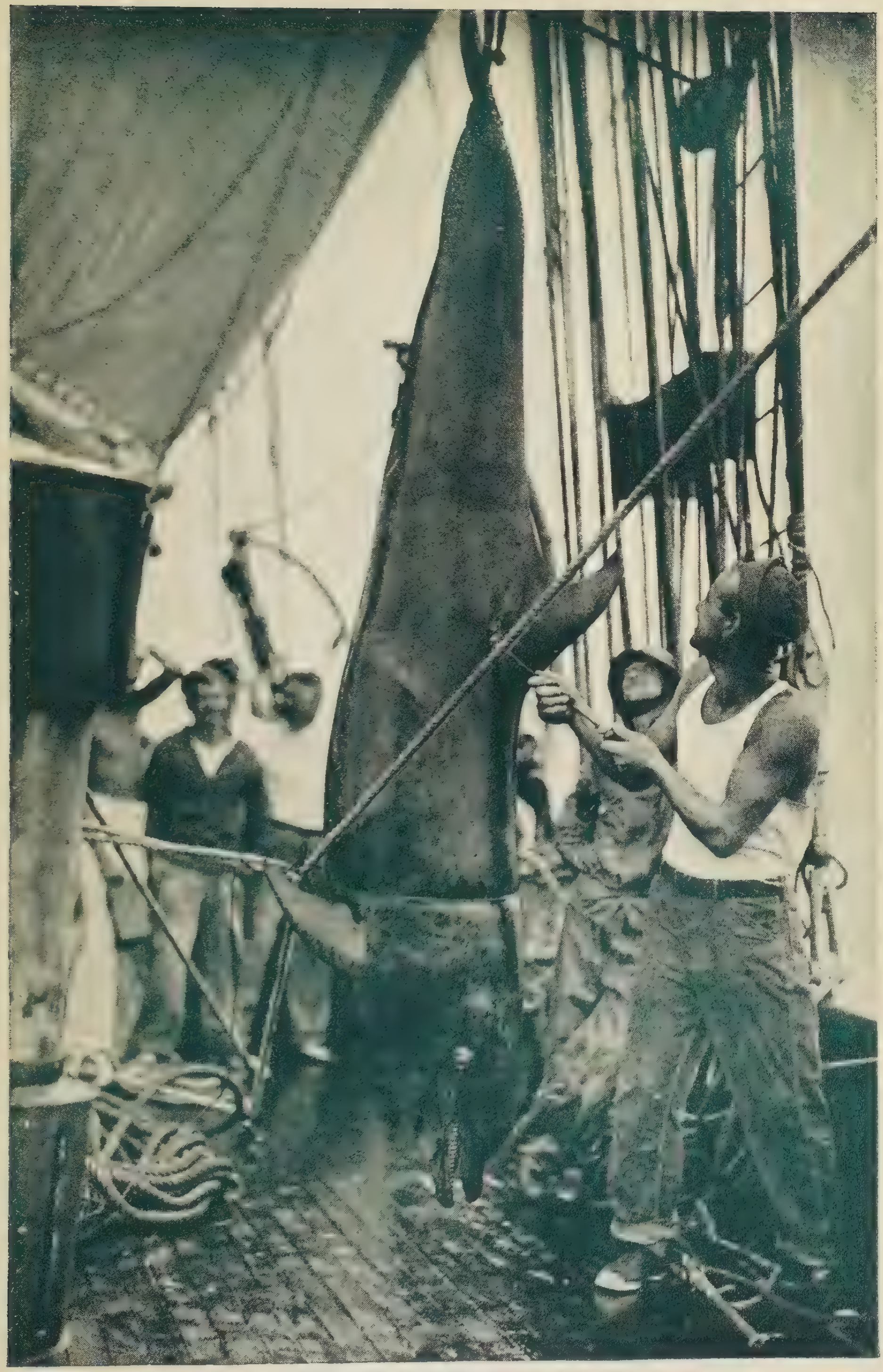
When the *Mary* hove her anchor short and we slipped away it rained. Through the mist the island loomed greener than any emerald, but pouring with water. I counted twelve cascades in sight at one time—long slim threads of water amidst the green—some of them two or three hundred feet in height.

At intervals along the eastern coast great conical rocks, too steep to land on, rose like old-time sugar loaves from the water, and against them and against the cliffs of the main shore a majestic surf burst into vast clouds of white that hung in the middle air till we wondered whether they would ever fall.

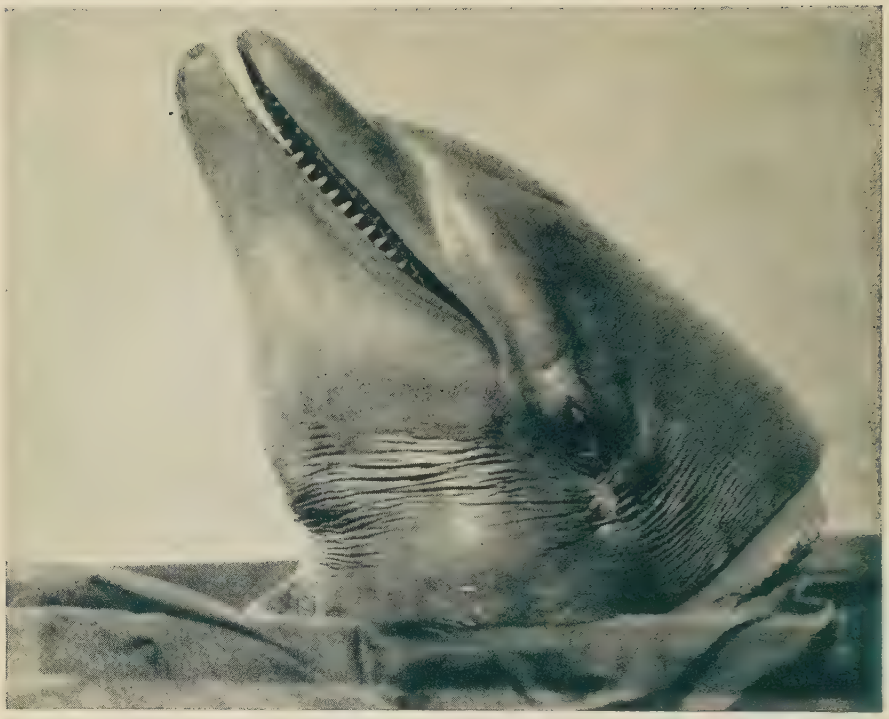
At the southern end of Cocos, incredibly sharp and rugged rocks rose like pinnacles from the water, one of them shaped like a tooth of a Tiger Shark. Here a high cliff faced and broke the great Pacific swell, spouting white sheets of spray. The *Coast Pilot* tersely remarks, "The southern side has not been examined." We saw enough of it to know that it was no place for ships.

While we were off the island a great school of Porpoises joined the ship. There must have been hundreds of them, for they were scattered all over the ocean for half a mile, and were making leaps that were more than spectacular. The same black polished body would rise from the water three or four times in succession, rise three or four times its own length above the surface, and fall back nose first or twist and strike on back or side. We saw such leaps no less than fifty times.

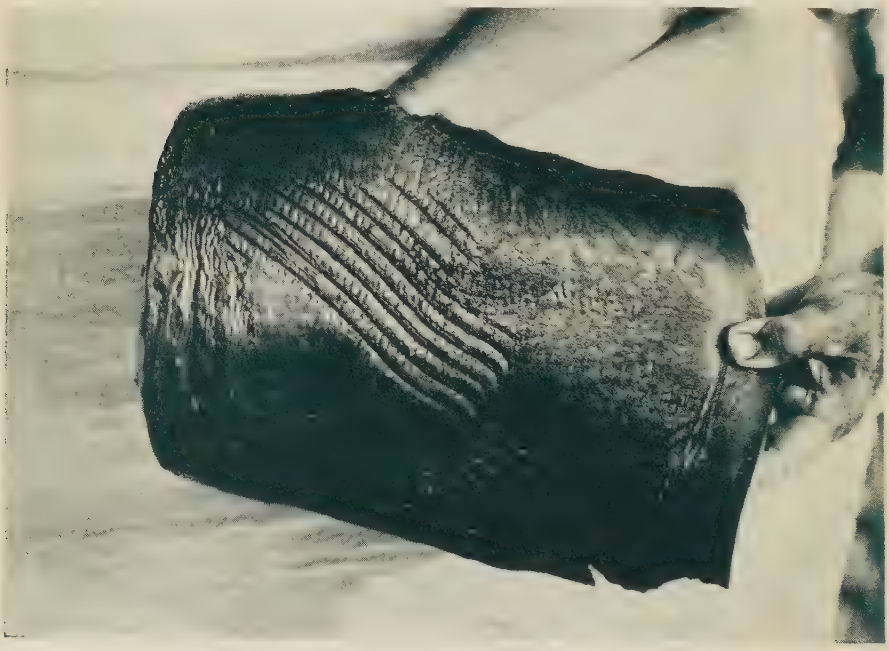
The National Museum was hungry for one skull out of that multitude, and it was Otis Barter who



Otis Barter harpooned this Porpoise at Cocos Island



THE PORPOISE HAS FAR MORE BRAINS THAN ANY FISH. THIS IS THE HEAD OF THE PORPOISE WE KILLED AT COCOS



PORPOISES BITE EACH OTHER, AS THIS SECTION OF SKIN SHOWS threw the iron. The line ran out with such speed and power we could not stop it, and before long we saw the Porpoise thrashing at the surface. Handling a big schooner like a fishing launch is not so easy, but we kept the Porpoise on the port side till eight or ten of us tailed on and brought it near the ship. It dove and narrowly missed cutting the line against the keel, but luck was with us. Stiff went for a rifle, and when he did not want to shoot I had luck enough to kill our specimen dead with the first shot.

This Porpoise was eight feet nine and a half inches long, and weighed 450 pounds. It was too wet, too late, and too rough to photograph it, or dissect it, or do anything but let it wait for the morrow.

But its companions still played around the ship. I never saw Porpoises do that after a fish was fast before.

Having stayed at Cocos as long as we liked, since our trip had no fixed time-table, and having had Cocos wholly to ourselves, we left it feeling that we owned it. It is sometimes called "The Island Nobody Owns," and if it was nobody else's island why wasn't it ours? So we adopted the poor orphan and chose Prof as guardian and governor. He accepted his election with many and warm expressions of gratitude, but solely on condition that he should be required to live on the island during the dry season only.

IV

SHARK!

IN THE bitter days of the Great War there were many disillusions. One of the bitterest in poverty-stricken Europe followed the development of a species of pest which infests the neighborhood of every war—the War Profiteer. It turned out that while millions of men had been valiant and women brave, a number of other persons had built up fortunes for themselves out of the miseries and necessities of their fellows.

In Italy the word for such was the name of the most feared and despised of the sea creatures, *pesci cani*—sharks.

Living on the miseries and necessities of their fellows is precisely what Sharks do best. A fish in trouble is the Shark's natural prey, but a prosperous fish in good health and spirits means nothing to most of them. A vigorous fish is usually Shark-proof.

Over and over again I have seen Sharks swim within eight or ten feet of schools of fish without provoking even the compliment of shrinking away on the part of a single one of them. But let a fish show signs of distress and the whole picture changes. That is what the Shark is waiting for and he goes into action at once.

Sharks are front page news. I suppose there can not be many less than a million Sharks in the sea for every Whale, and certainly a single Whale may weigh a thousand times as much as the ordinary Shark. Yet the cry of "Shark!" on board a liner is followed by the same frantic rush to the rail as the cry of "Whale!"

You can break up almost any conversation, any time, anywhere, by introducing the simple questions: "Will a Shark bite a man?" "Has a Shark ever bitten a man?" "Is there such a thing as a man-eater?"

Perhaps our intense interest in Sharks rests on a race experience of ancient days when primeval Sharks actually did eat men; when to the earliest of human navigators, venturing out upon unknown waters with nothing more substantial under their feet than a log or two fastened together with hides or vines, Sharks were a genuine menace. And so we moderns, looking down over forty feet of the steel side of a great steamship at a six- or eight-foot shark sculling harmlessly by, feel within us the stirrings of an ancient dread.

I love to kill Sharks. When I was ten years old my father took me Shark-fishing off Nantucket. Then and there I hooked my first Shark and hauled him up to the boat. That was as far as I could get him, for he weighed much more than I did. How he looked to a frantically excited little boy—his gaping mouth bristling with long sharp teeth, his tail lashing the water till I was wet with the spray—I shall never forget, or the smooth clean outline of his gray torpedo body. I still have that Shark's jaws.

Sharks are far less dangerous than some people suppose. They are also far more dangerous than the prognosis of their innocuosity, if you know what I mean, might lead you to suspect. One species in particular, out of something like 250, has a really bad reputation. That is the Great White Shark, which is seldom seen at all, and still more seldom near the coast.

Other and less enterprising Sharks are far more common than is often thought. As a boy I used to swim off the south shore of Long Island. My father bought me a canoe, in which, with an accomplice of my own age, I spent much time running the surf. As soon as we learned to get out beyond the breakers we also learned that a hundred yards or so from shore a constant procession of little Sharks swam up and down parallel to the beach. After we had seen them from the canoe we found that we could see them from the beach with a glass, and very shortly became highly avaricious in the matter of acquiring some of them.

Day after day, with a harpoon like the golf clubs in the story—extremely ill-suited for the purpose—we hunted these little Sharks through the swells of the open ocean. Many of them we hit, but our lily iron, designed for fish a dozen times their size, was too big. Adventure we got in plenty, or the sense of it;

Porpoises came around in numbers, far too close to our canoe for comfort—but we never got a single Shark.

Some of these Sharks were Hammerheads, to which Mayne Reid ascribed such astounding ferocity. Some of them were doubtless Dogfish. Most of them were from two or three to five or six feet long. I do not believe any of them would have bitten a man on a bet.

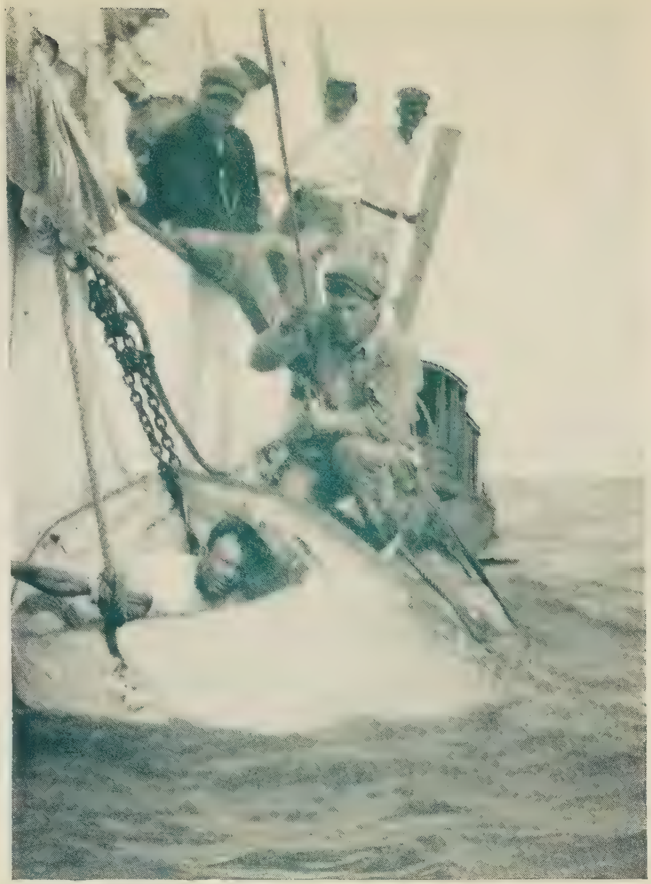
And still such things do happen. Van Campen Heilner, a well-known authority on fishing, and an excellent fisherman, as I can certify from having fished with him, has this to say in an article in *Field and Stream* for January, 1930:

> "While swimming in the surf at Beach Haven, New Jersey, on July 1, 1916, Charles E. Van Sant, an acquaintance of mine, was attacked by a nine-foot shark and so badly bitten in the left leg that he died shortly after from loss of blood.
>
> "Within a few days of the above happening, Charles Bruder, a bellboy from one of the large hotels at Spring Lake, New Jersey (the writer's home), was attacked and killed off the surf by a shark, which bit off both his legs.
>
> "On July 12th following, while swimming in Mattawan Creek, ten miles from the ocean, Lester Stilwell, twelve years old, was dragged beneath the surface by a shark. In endeavoring to bring up his body, not knowing that a shark had seized him, Stanley Fisher was so badly bitten in the leg by the fish that he died from loss of blood. On its way out of the creek the shark seized twelve-year-old Joseph Dunn, who was also in swimming, but released him without inflicting a fatal wound. Persons who saw the shark when it grabbed Fisher said they thought the fish was about nine feet long.

> "A short time after this, my scrap book of that period contains the following clipping:
>
> "'A White Shark which weighed 380 pounds and is 8½ feet long was caught four miles off shore and taken to the fishing pier at Long Branch, New Jersey, where it was on exhibition yesterday. The species is unusual in waters adjacent to New York City, but is common in seas of the tropics.'
>
> ". . . There is not the slightest doubt in my mind that it was the same shark which attacked all five people, killing four of them. Human clothing in that particular shark's stomach definitely branded him as a man-eater. That the majority of attacks on human beings by sharks have been made by White Sharks I have no more doubt than I have that the majority of sharks are harmless."

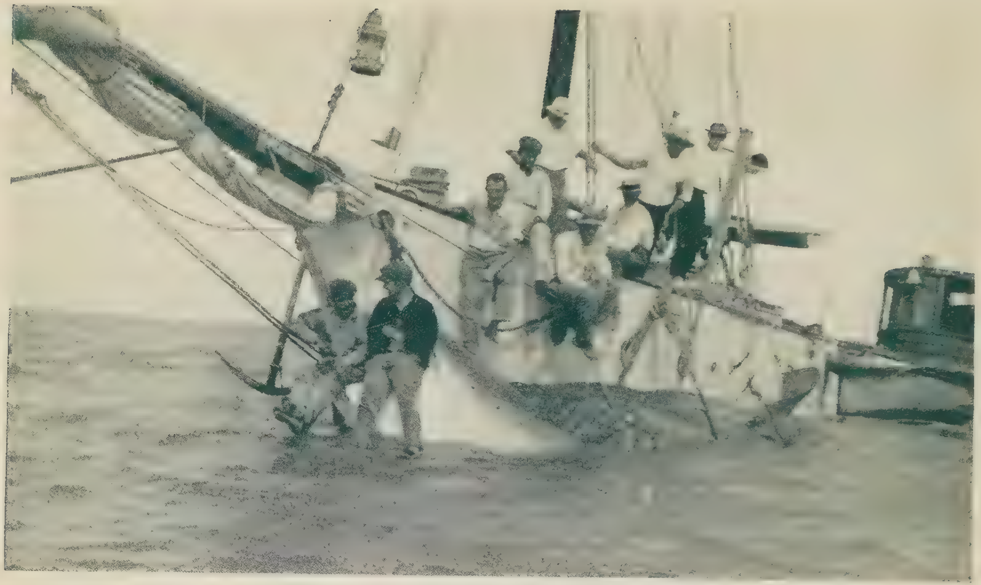
After passing Hatteras on our way south, we began to see a Shark here and there, and at Key West we ran into real stories about them. There we got not only a tale but a picture of a Shark, caught off the dock at that astonishingly interesting port, which on being cut open by some inquiring mind was found to have the partly digested arm of some unfortunate human inside of it. Whether the photograph was genuine the reader can judge as well as I. I can only say that the people who told us of the incident were obviously telling what they believed to be the truth.

At Old Providence more evidence of moral delinquency on the part of the Shark family came to light. A. K. and I had gone in pursuit of whatever the Red Gods might choose to provide, with one Uriah Borden,



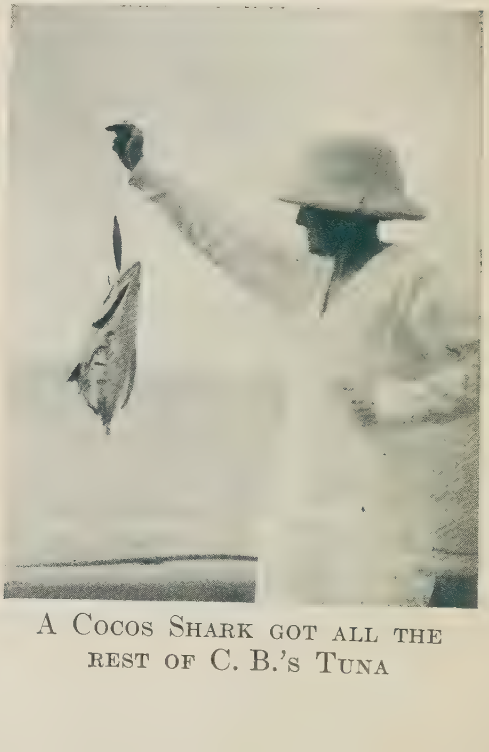
The Whale Shark has no teeth, but he has a whale of a mouth

This nine-foot Shark was a good shark ever after



Rhineodon typus. Which is bigger, the schooner or the shark?

When a Shark bites a Manila rope

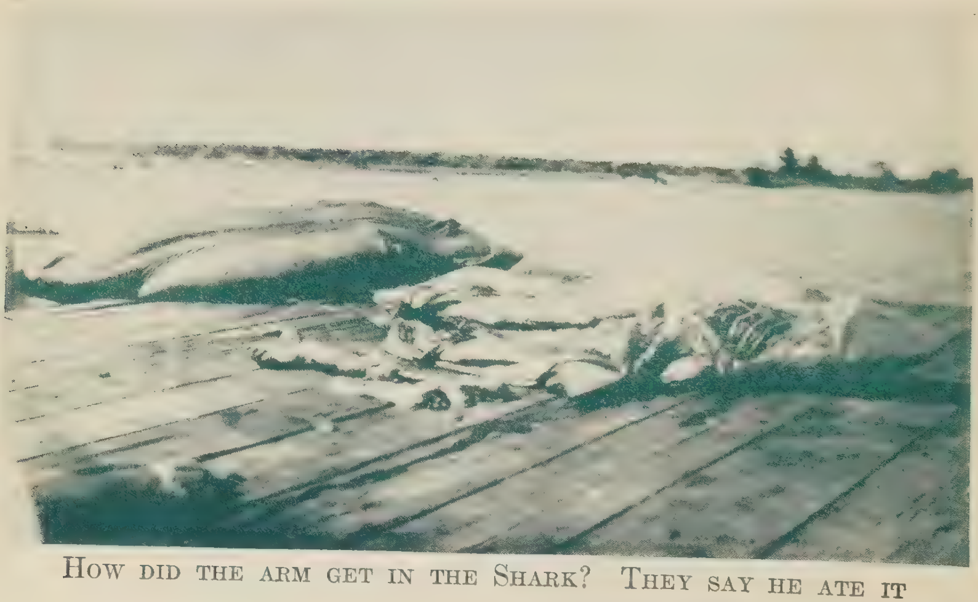


A Cocos Shark got all the rest of C. B.'s Tuna

Our highly competent surgeon shows the cutting instruments in a Tiger Shark's jaws

What other Sharks left of the Shark Otis caught one night

Taboga Beach, where a man was killed by a Shark



How did the arm get in the Shark? They say he ate it one of the best-known fishermen of the place. We were trolling inside the magnificent reef which stretches for nine miles north of the island, and, with certain winds, offers a magnificent smooth water stretch of equally magnificent fishing. A. K. had a strike and was reeling in his fish when three Sharks charged it, one of them so recklessly that he banged headfirst into the side of the boat and threw water all over us. That was the last we saw of A. K.'s fish. Instantly, Sharks having thus butted alike into the boat and the conversation, everything else was forgotten, and Borden told us the following story:

At Turtle Bogue, on the coast of Costa Rica, there is a beach famous for the number of turtles that lay their eggs upon it. The surf is so high that boats can not land. Hence the turtle-turner, after turning his turtle, ties to a flipper his line with a small buoy attached, turns his turtle back again and turns it loose, whereupon the re-turned turtle promptly makes off through the surf, dragging the buoy with him, and first the buoy and then the turtle is picked up by a waiting boat.

On September 12, 1919, Borden was on this beach at a place where the Colorado River breaks through to the sea. A small vessel with thirteen men on board attempted to cross the bar, struck, and was being pounded to pieces by the great rollers. The thirteen men got into the tender, which capsized because it was not big enough to carry them. Six were drowned at once and the remaining seven swam for the shore, where Borden and others were standing, helpless to assist because they had no boat.

Six of the swimmers were taken by Sharks so near the beach that Borden heard them scream, saw some of them lifted partly out of the water by the onset of the Sharks, saw the Sharks, and saw the blood. The last man taken by the Sharks was so close to land that a chain of hands had already been formed to drag him from the water. One man succeeded in getting ashore.

Three days later, at the Island of St. Andrews, I met the Panamanian Vice Consul, Mr. Anton Holgerson, who told me the same story, with the addition that the one man who escaped was his brother.

On both these islands it appeared to be well accepted that Sharks eat man as cats eat cream—when they can get it. There is, of course, no such thing as a man-eater in the sense in which the word is used, for example, of a man-eating tiger in India. Such a tiger hunts for men as a normal part of its diet. That never happens to a Shark unless in some wholly exceptional case, as when Sharks followed slave-ships for the bodies that were thrown overboard. Not one Shark in tens of millions ever tastes human flesh, but every now and then the rule is proved by the exception.

Moreover, there are Sharks and Sharks. Some couldn't bite a man if they tried, for they have nothing to bite with. Some have mouths filled with row upon row of the most formidable razor-edged teeth. Some have no teeth at all and, like bull calves, are dangerous only because of their bulk and weight. One of these is the Nurse Shark of Florida, which in all human history has never hurt anybody unless by accident. Another is the Great Basking Shark and another is the Whale Shark, of which we heard both at Old Providence and at St. Andrews.

At the former place the police force of the town, whose name was Guillaume Thomas—he was very proud because his father was a white man and a native of Nantes, France—and who was one of the most fluent conversationalists that ever crossed my bow, told us of a Shark that had recently been seen just outside the northern reef by two men of the Island. He was well known, it appeared, between St. Andrews and Old Providence. Thomas said they mistook the Shark for a shoal, he was so big, and that he was right close to the boat but they succeeded in getting away from him. "He can't come inside the reef," said Thomas, "because the least water he draws is fifteen feet"; and then pointing, "He is as big around as that house."

When I asked Captain H. J. Bradley, a highly respected American sea captain, who has lived for forty years at St. Andrews, about the story he replied that he was personally acquainted with the Shark of fifteen-foot draft; that the said Shark had put its head right under the stern of a boat he was on, and that the head was much wider than the boat.

Captain Bradley and Consul Holgerson then told us of a case where one of these Whale Sharks had lifted a boat partly out of the water and had knocked off the rudder.

Mr. Holgerson added that he had been in a seventy-foot schooner when one of these Sharks came alongside. He said it was fully as long as the schooner and that Rubinstein, the Coconut King of St. Andrews, in whose hearing the story was told, had been so panic-stricken that he had rushed from the side and grabbed hold of the mast. All of which Rubinstein himself confirmed.

These huge Sharks (*Rhineodon typus*) live, like the Whalebone Whales, on the minute animal life of the sea, which they catch by the simple process of moving through the water with their mouths open. Water and plankton go in, water alone goes out, and so the Shark is fed.

Charles Twing Brooks of Cleveland, Ohio, a classmate of mine, harpooned a Shark of this species at Miami, Florida, some years ago. After great difficulty, caused solely by the enormous size of the fish, which was a non-resister of the most pronounced kind, he killed it and brought it ashore. The skin was prepared for exhibition by Mr. J. S. Warmbath of Washington, D. C., and was widely exhibited by Captain Charles Thompson of Miami, until, if I remember right, it was finally destroyed by fire. I was glad to have its photograph for this collection.

This Supershark was thirty-eight feet long, and its mouth was so large that a man could curl up in it, as the picture well shows.

C. B. has many advantages over me, and one of them is that she is not afraid of Sharks. I am. I never go overboard in deep water where Sharks may be without feeling thoroughly uncomfortable. And I am very far from sharing the opinion of the late Dr. Henry Mayer, head of the Carnegie Biological Laboratory at the Dry Tortugas off the Florida coast, who used to say that he would rather have twenty years of swimming in tropical waters and be eaten by a Shark at the end of that time than not have the swimming. To which the obvious retort was—what makes you think the Sharks will wait for twenty years?

This attitude of his was no mere idle talk. One afternoon at the Tortugas Laboratory, Mayer and I were swimming just where a large Shark had been seen that same morning. I was well out beyond him when I happened to look down and saw a long black streak in the water beneath me. Instantly I remembered that I had the most pressing kind of engagement on the beach.

As I reached Mayer, going at record speed, I said to him:

"I think there's a Shark out there," to which he made the amazing reply:

"Is that so? Let's go out and see."

Whereupon with extreme reluctance I went back with him. We swam around a little, to the marked discomfort of G. Pinchot, and then Mayer said, "No, it isn't a Shark. It's just a long black log lying on the bottom." And, thank Heaven, it was.

A Shark that turns into a long black log is harmless enough, but there are Sharks that are less so. While we were at the Panama Canal we had the luck to meet General Malin Craig, Commandant of the American troops in the Canal Zone. Out of his own experience he told us a Shark story which, for gruesome convincingness, leaves little to be desired.

Years ago General Craig was in command on Corregidor Island, an almost inaccessible rock that nearly blocks the entrance to Manila Bay. At that time the soldiers who were stationed there had no way of leaving or returning to the post except by being lowered or hoisted in a boat by rope and pulleys (boat falls), which sometimes slipped or broke and dropped men and boat into the water.

In reply to a letter asking for the facts for publication, General Craig kindly wrote me under date of December 7, 1929, as follows:

> "I was in command of the forces at Corregidor Island in 1923 and 1924, and personally saw several members of that command who were brought in either moribund or already dead from the bites of sharks. I seem to remember the number to have been six or more which I myself saw. Most of these men were Filipino soldiers who had fallen into the water at Fort Drum, which is in the center of the South Channel and where the water is literally teeming with sharks. I remember one soldier

> who was almost disemboweled while I was inspecting at Fort Drum, and I summoned an aëroplane from Corregidor which took this injured man to Corregidor by lashing him on a wing. He died, however, very shortly. Of course the records of the Headquarters of the Coast Defenses of Manila and Subic Bays contain accurate data upon this subject matter."

The Adjutant General of the Army, General Bridges, in a letter written January 23, 1930, was good enough to supply me with parts of the report of Colonel James M. Phalen, of the Marine Corps, on the death of a young Panamanian on November 4, 1928:

> "In the afternoon this youth went in swimming with some companions from the beach in front of the village of Taboga (across the bay from Balboa). Rowing races were in progress as a part of the day's celebration. Just as one of the races was finishing near by, the youth left the boat to which he was clinging and started for shore. While less than fifty yards from the beach and while in about six feet of water, he was attacked by the shark within sight of many people on the beach and near-by boats. The shark struck three or four times, the last time while the boat was about ten yards away. When help reached him, the youth was found to be dead. One leg was gone, having been completely severed midway between the ankle and knee. The other leg severed in about the same place was hanging by shreds of flesh. A section of the abdominal wall had also been carried away. The shark was captured. It was about nine feet in length, and its abdomen contained the missing leg and other flesh and part of the youth's bathing suit. The shark was a species known locally as

the Tintorera Negra, or the Jaba. It probably belongs to the genus *Carcharias.*

"This report was published in *The Military Surgeon* of March, 1929, page 383."

General Bridges adds:

"A report card received in the case of Robert W. McGhee, Pvt. 1st Class, Co. K., 8th Infantry, shows that he was admitted to Station Hospital, Fort Moultrie, South Carolina, August 5, 1929, on account of wounds, lacerated, multiple, severe, involving dorsal and plantar surfaces, left foot, severing extensor tendons of all toes except great toe and opening up ankle joint at tip of fibula; accidentally incurred by shark bite while in surf bathing at Fort Moultrie, South Carolina, August 5, 1929. A Board of Officers was appointed to investigate the accident and found that the injuries sustained by this soldier were accidentally incurred by being attacked by a sharp-tooth fish of some kind while bathing at Fort Moultrie. Soldier was returned to duty, September 30, 1929.

"The following list of references to the literature concerning this subject is forwarded. (I have omitted most of them for brevity.)

"Ensor, F.—A man's leg completely bitten off by a shark while bathing in the sea; rescue and immediate amputation above the condyles, recovery. *Lancet*, London, 1886, 1, 1160.

"Orme, W. B.—Three cases of shark bite. *British Medical Journal*, 1899, ii, 1534.

"Guthrie, J. A.—Three cases of shark bite. *New York Medical Journal*, 1902, LXXVI, 867.

"Boyle, J.—Case of extensive lacerated wounds from bites of a shark, amputation of both arms, recovery. *London Medical Gazette*, 1928–9, iii, 502."

One more case will be enough. I quote from the records of the Surgeon-General's Office, U. S. Army, courteously furnished me in a letter from Surgeon-General Ireland himself, under date of February 5, 1930.

> "Abernathy, Marcellus T., 6319080. Accidentally incurred at 3 P. M., August 28, 1921, at Fort Frank, Philippine Islands, while swimming 100 yards from shore when attacked by a shark; soldier swimming back unaided. 1. Wound, extensive, severe, anterior abdominal wall, with loss of entire wall from level of ensiform cartilage and between the two anterior axillary lines with large lacerations of stomach, transverse colon, and ileum. Operation, August 28, 1921. About 2 hours after receipt of injury, lacerations in stomach and intestines repaired; a new wall for abdomen constructed from tissues brought down from chest and sides to abdomen. Died 7:55 P. M. Cause: shock. No autopsy. Station Hospital, Fort Mills, Philippine Islands."

If all this does not amount to a demonstration that Sharks kill men, I wonder just what would.

When we left the Caribbean and the Canal and reached the Pacific Ocean, Cocos Island, and the Galapagos, we saw very few large Sharks, but from ten or twelve feet down they were everywhere. They acted as if they had recognized us by our birthmarks, and could not bear to be separated from us again. They were friendly beyond all reasonable limits, and the smallest encouragement in the way of fish scraps brought them swarming about the ship in numbers that promptly vetoed every thought of swimming in those waters. At Cocos Island they held reunions around the ship every night.

In many of the best fishing places it was impossible to save hooked fish on light tackle, or much of the time on heavy tackle either. A few scant seconds after a fish was hooked there would begin that jerky motion of the line, now a strong pressure, then none at all, that comes when a fish in play is dodging a Shark. The thing to do in such a case is to give your fish his head.

Many and many a fish came aboard the launch scarred from the vicious teeth, but still whole. Of many another we recovered nothing but the head, while the Sharks took the rest. Time after time the swift motion of a game fish gave way to the dull, heavy, and somehow vicious drag of one of those coyotes of the sea, and away went the fish, spoon, line, and all, and we could do nothing to stop it.

The smaller Sharks were even bolder than their elders. When we let them get a taste of a bait, and then swung it above the surface, they often jumped out after it and hung on like bulldogs, by their teeth alone, until they were lifted partly clear of the water.

Sharks of all sizes came around our boats so closely that it was easy to hit them with an oar. One day from the launch I narrowly missed grabbing a small one by the tail, and another day I actually did hook one in the nose with about three feet of line and an empty hook.

One afternoon at Cocos we saw a great and tremendously impressive spectacle of the innumerable abundance of life in the sea. A huge flock of screaming Boobies was taking toll of a school of fish from the air, while Porpoises, Crevalles, Yellowtails, and Sharks were striking at them from below. Through the small circle of a waterglass I counted eight Sharks visible at one time, and I imagine there were at least fifty within fifty yards of the boat.

But after the Sharks had been bothering us all day, at night we took a great revenge. Then, threading the bait we had saved for them on Shark hooks mounted on steel chains and attached to strong lines, at every anchorage where we tried it, we caught as many Sharks as we chose.

At the cry of "Shark!" all hands came running—the cook and the captain bold, and the crew of the *Mary Pinchot*, and then the fun began. We all tailed on when the line came taut, and it was a strong Shark that denied us long. In the glare of the electric light the smooth dun-colored bodies seemed enormous as they came thrashing and snapping to the side of the schooner, often through dense clouds of smaller fish, or when they swam about and seized the bait at the surface, and made us think of what would happen if somebody fell overboard.

Once when a Porpoise, just started on its way to join the collections in the National Museum, was hanging from the shrouds and dripping blood into the water, I counted nine of the brutes within a few yards of the ship, all visible at once and all of them about nine feet long. It was a sight to drive a manufacturer of bathing suits into premature decline.

Sharks not only eat but they are eatable. Shark meat of certain kinds is simply delicious. I have eaten Mackerel Shark taken in the North Atlantic that could scarcely be distinguished from Swordfish, than which, to my taste, no better morsel swims the sea.

But Sharks, though eatable and eating, seem very seldom to eat one another. Out of many hundreds taken through many years, although I have occasionally caught a Shark on a hook baited with a piece of another Shark, I have seen but one whose body showed the slightest evidence of a difference of opinion with a colleague. In that case there was nothing left but the head.

It is true that Zane Grey, a popular writer on angling, in a description of fishing at Cocos published not so long ago, draws a terrific picture of what happened when the dead body of a Shark was allowed to sink among its ferocious relations. "They massed around the carcass of their slain comrade and a terrible battle ensued. Such swift action, such ferocity, such unparalleled instinct to kill and eat!"

Well, we did that very thing over and over again. We provided the carcasses of slain comrades by the dozen, let them sink into swarms of live comrades, and not one bite was bitten, not one scratch was given, as far down into the water as we could see—and this was at Cocos, in the very waters Grey describes.

As to terrific battles among Sharks, the temptation to give the public what it expects is sometimes overwhelming.

V

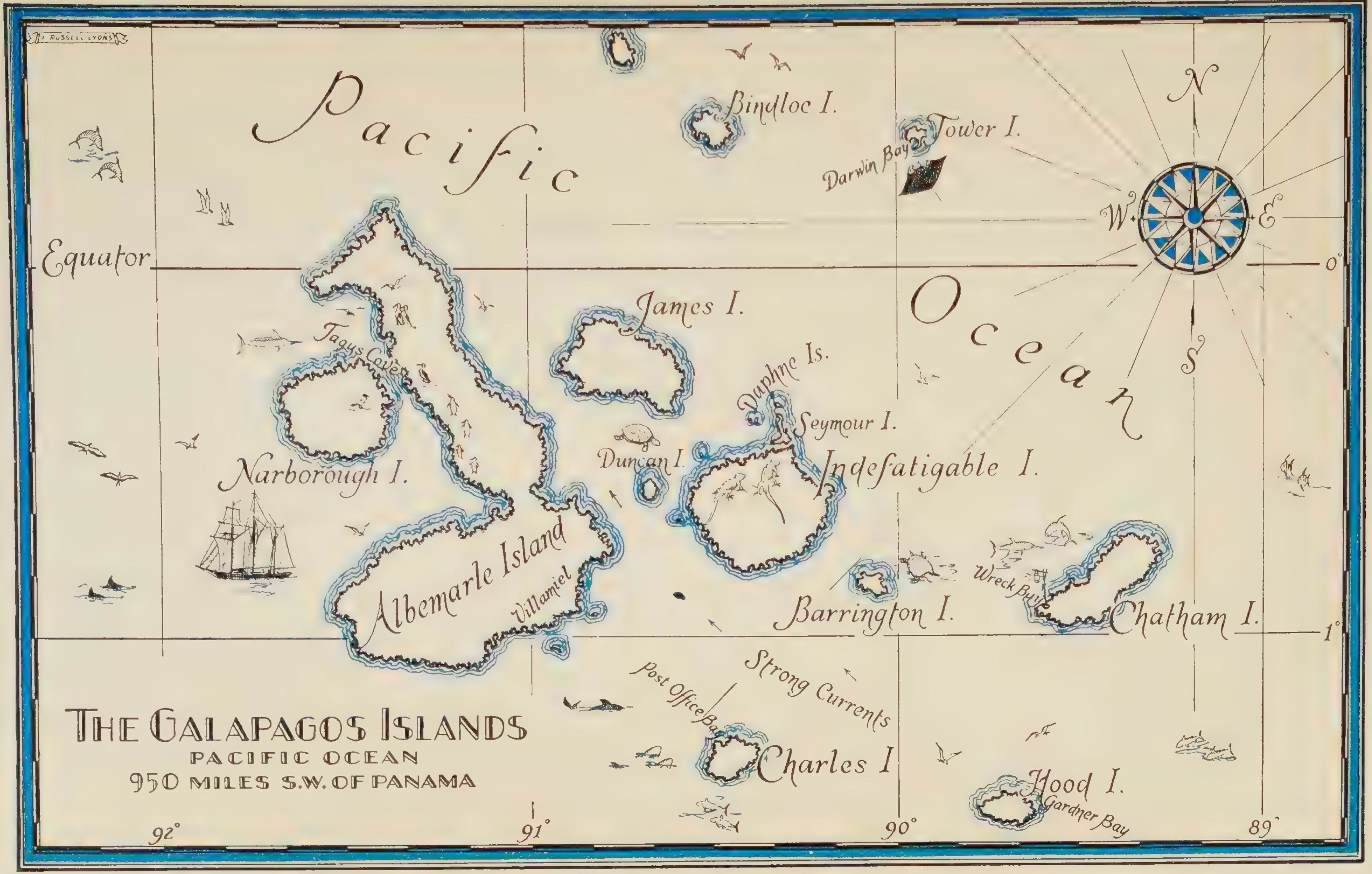
THE ENCHANTED ISLANDS

SINCE the brave days of the Peruvian Incas, the island group of the Galapagos, called by its Spanish discoverers "The Enchanted Isles," has ensnared the imaginations of men.

The Enchanted Isles. The name rolls sweetly off the tongue. It has its source most probably in the surrounding cross currents and winds which made it so difficult for sailing vessels to approach or leave.

Almost a hundred years ago a youngster of twenty-six, Charles Darwin, visited these islands and came away inspired to write the *Origin of Species* and change the thinking of the scientific world. Hardly another spot on earth, except the Poles themselves, have been so little visited and yet have exercised so profound an influence on human thought.

Neither in position (since they lie under the Equator) nor in appearance (since their shores are rough and dry) are the Galapagos really South Sea islands in any proper meaning of the words. They are the tops of volcanic mountains sticking out of the sea. Many of them are still in the making. One volcano was pouring out new land in the shape of hot lava



THE GALAPAGOS ISLANDS
PACIFIC OCEAN
950 MILES S.W. OF PANAMA

RUSSELL LYONS
Pacific
Ocean
N
W
E
S
Equator
0°
1°
92°
91°
90°
89°
Bindloe I.
Tower I.
Darwin Bay
James I.
Tagus Cove
Daphne Is.
Seymour I.
Duncan I.
Narborough I.
Indefatigable I.
Albemarle Island
Villamiel
Barrington I.
Wreck Bay
Chatham I.
Strong Currents
Post Office Bay
Charles I
Hood I.
Gardner Bay

as lately as 1928. At the end of this chapter, you will find some thoughtful and suggestive notes on these islands by Prof.

Six hundred miles off the coast of Ecuador, to which they belong, these islands lie almost squarely on the Equator, but with the blaze of the vertical sun tempered by the cold Humboldt Current which washes their shores.

In Ecuador they pronounce the name *Galáp'pagos*—Spanish for tortoises—although the official title is Archipiélago de Colón. But the South Sea whalers, who came here for wood and water and the great land turtles they called "terpins," said *Galapay'gos*, and Galapaygos they are to me.

Incidentally, it was to the islands of the Galapagos that his buccaneer rescuers brought Robinson Crusoe from San Juan Fernandez.

The gap between civilized life in America, where we have grown to be the servants (or the masters) of each other's needs, and life in the Galapagos, where the civility of the uncivilized, the natural good manners of wild things, is the dominant note, is hard to bridge. The sixty odd islands—only fifteen of them considerable—for which we were now bound are unbelievably different.

"Uninhabited islands at least 2,000 feet high" were what Giff and Stiff required of Southern Seas. In fact Giff had put over a deal on C. B. to the effect that every day we landed at such an island he should be excused from lessons. The Galápagos were just what Giff was looking for, and the bargain held. However, in the face of the prodigious history lesson written in rock and flora and fauna which soon lay open before us, we did not grudge him his so-called holidays.

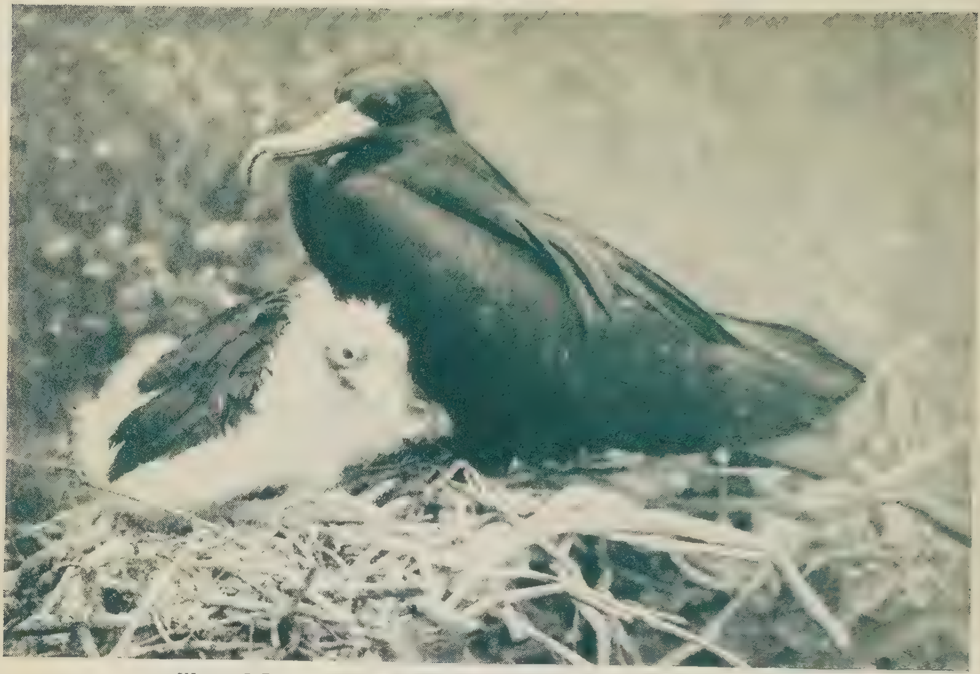
Only two weeks distant from New York—with the use of a special boat out of Balboa—the Galapagos have remained remote and strange. It might be said of them, as Mr. Dooley once said of the Philippines, that until recently most of us didn't know whether they were islands or canned goods.

At home the wild creatures are wild, and tame creatures are tame. But in the Archipelago of Columbus the cattle, donkeys, goats, and dogs will run from you as if you were the very devil, while the birds of the air, the seals on the shore, and the lizards of the rocks will come to you and follow you, and hang around you, with the friendliest and most trustful curiosity. They seem bent on getting better acquainted.

It is a well-worn joke of the comic supplements to show the bird sitting on the muzzle of the hunter's gun. It actually happened to us in the Galápagos.

Many an old fairy tale tells about the boy or girl with whom the wild things came to play—the bear, the stork, and the wolf, the carp in the pond and the frog in the marsh. There are no bears, wolves, or frogs in the Galapagos, but there are Sea Lions (which in French are called Sea Wolves) and they will come and play with you, whether you are a boy or a girl or even

C. B. SEES HER FIRST BOOBY AT HOME



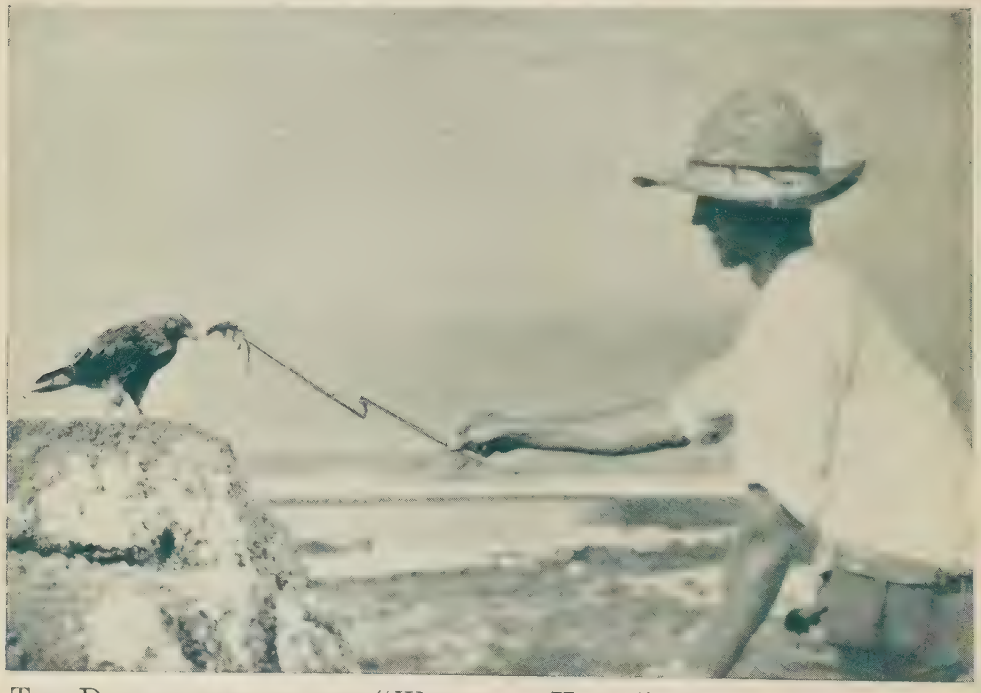
THE MAN-O'-WAR AND THE CHILD-O'-WAR

HE IS BEING RAISED TO BE A ROBBER

STIFF PHOTOGRAPHS MOTHER AND SON AT TOWER

STIFF PLAYS SEAL AND GETS FOUND OUT

Crossing the Equator. Nelson, the Mate, and Mert. They have trouble keeping warm



The Doctor proved that "Wild as a Hawk" meant nothing in the Galápagos a grown-up; or you may watch the little Sea Wolves busy with their own playthings—the feather of a Frigate Bird, or a branch of mangrove, or anything else that strikes their fancy—just like puppies on land or even like children, except that the Sea-Wolf puppies play more under the sea than they do above its surface.

At home the commonest and least regarded of all things is water. Whether you happen to be a prohibitionist or whether you don't, you can have all you want of it by merely turning a tap. Here you will find that water is the one thing you can't get when you need it—the most precious of commodities; far harder to come by, indeed, than food itself.

At home to most people rain is just a nuisance. Here it is to be desired above rubies. For these islands, set in the midst of the sea and full of high mountains, down whose long slopes brooks and streams and even rivers naturally would flow—mountains whose tops are almost always in the clouds, and over whose summits rainstorms sweep in unending procession—these islands are desert and dry. Like Texas in the story, the only things they are short of are water and good society.

At home you think of Turtles as little creatures that live in the water; but here the Turtles you will think about most never go into the water at all, and some of them weigh hundreds of pounds.

At home Bats are found in the air, but in these miraculous islands the commonest Bats are Sea Bats, and instead of a few inches across the wings, they spread fifteen, twenty, or perhaps nearly thirty feet, and the weight of the largest is measured in tons.

And then there are the Lap Dragons, about which more hereafter.

At home when you go for a walk you generally begin it and finish it in very much the same kind of country. But here you can walk in half a day from uninhabitable, waterless, almost impassable cactus desert to tropical rain forest, and the richest of rich upland pastures, which recall nothing so much as certain famous paintings of mist-covered Scottish moors and mountains except that they are grazed by finer cattle and are beyond comparison more fertile.

The Galapagos were discovered by the Bishop of Panama in the year 1535, but that ecclesiastical fact seems to have had no permanent effect upon their moral character. For a century or two the islands became the resort of pirates and buccaneers, and afterwards convicts were sent to them; so that for a time their history is a dreadful story of suspicion, revenge, murder, and hate, and human suffering and failure.

At the same time they harbored, and they harbor still today, the most friendly, cordial, confident, and fearless birds and beasts, I imagine, that the whole world has to show. Here is the nearest approach to the Garden of Eden that remains to this wearied earth —the Galapagos Islands, where the Lap Dragons are.

Think of almost any material fact that would be unbelievable about an ordinary group of islands, and more likely than not it is true about the Galapagos. Or take this example:

When the summer comes at home and heat waves begin to spread misery and death, we pity the poor people farther south, where the blazing sun of the Equator sucks human vitality away and where to go out bareheaded in the middle of the day amounts to suicide.

But in the incredible Galapagos, squarely under the equatorial sun we used to dread, at the very moment when our wireless was giving us news of terrible heat at home, we were not only running about bareheaded, but were wearing flannel shirts and sweaters and pea jackets, and often feeling uncomfortably cold unless we did.

We slept under one or two or even three blankets. And when we crawled out of them, the most exciting and vociferous moment of the day was when the cold stream from the hose was turned on some of us in the cold gray dawn of one more glorious day.

During the five weeks we spent in the Galapagos we were almost never too warm, but very often too cool. When I go back again to these beatific islands, as I hope and intend to do, I shall take summer clothes, of course, for there are times when they are needed, but I shall also take such clothing as I would wear in October at home.

This is not to say that we were never hot. We were when we got into inland places where thick leafless brush and black lava ridges kept away the wind but not the sun. We were hot when we walked hard and long over rough country, or when we carried heavy packs, or when we climbed steep slopes. But under similar circumstances we would have been at least as hot back in God's country.

At Bar Harbor and elsewhere north of Cape Cod along the New England coast, the water is so cold it keeps the air cool too. The Arctic Current, flowing southward, holds the thermometer down. Just so the Humboldt Current, flowing northward to the Galapagos from Antarctic icy wastes, controls the temperature in this shadeless country, and in July brings to the Equator the heavenly autumn climate of Pennsylvania hills.

Moreover, while there are calms in the Galapagos, there are no storms. We saw no evidence of any in broken trees, smashed houses, or debris on the beach, although we landed on ten of the fifteen principal islands, and on some of them many times. We rode more than halfway across the largest island of all, and far into the interior of others, and nowhere found indications of rough weather. But we did see and went aboard the little schooner, *Manuel J. Cobos*, which runs every now and then between Guayaquil and the islands, and has been doing so for fifty years without suffering a single accident or passing through a single storm.

While the greater islands of the Galapagos for the most part run quietly down to the coast, if there is any characteristic that predominates in the infinite variety of form and outline among the smaller islands, it is perpendicularity. They seem to specialize in it. On some of them the rock walls, rising directly out of deep water, are so nearly vertical that a landing could be made upon them only with great difficulty, if at all. On some, I imagine, no human foot has ever trod.

In many cases the waves have cut the shore line inward in a deep groove, so that at ten or twenty feet above low water the rock actually overhangs, and one walks or crawls, if one can keep one's feet at all, under a sort of stone portico the roof of which is carved into innumerable coigns and arches and inverted pinnacles of the most fantastic form.

Not seldom the unceasing erosion of the waves has worn the rock away into huge caverns and flying buttresses and natural bridges, and here and there a great promontory or a whole island, like Watson Island or Kicker Rock, has been pierced clear through from side to side in a passage high and wide enough to take a boat.

All this may sound like the description of an earthly paradise, where every prospect pleases and only man is vile. What then about the Galápagans?

There are less than seven hundred of them all told, and they occupy only minute fractions of the four inhabited islands. Eleven out of the fifteen largest islands are uninhabited.

It must be admitted that the people of the Galapagos have not, to put it mildly, been well and favorably known around the world. Two of the islands have at different times been used as penal colonies, and one of them was for many years the scene of violence and oppression enough to make it doubly infamous.

At one time or another nearly every man in authority on this island was either murdered or driven out, and probably in most cases they deserved it. But when years ago the bad days disappeared, their evil reputation lived on after them—which is by no means unusual with islands, or men either.

Before the *Mary Pinchot* sailed from home, I was warned by the few men I knew who had been down there to beware of the people. The descriptions they gave me fairly sizzled. The Galápagans were said to vary from diseased and miserable wretches through petty thieves to wreckers, pirates, and murderers at large. A scientist of international reputation who had visited the islands cautioned me against one place in particular, while an officer of a great yacht assured me that only the summer before its owner had so distrusted the inhabitants that he refused to let his boat come nearer than ten sea miles of any settlement.

But I remembered something about travelers' tales, and I took the precaution to carry with me a letter to the governor of the Galápagos from the Ecuadorian Minister at Washington. And so we decided to put the matter to the proof, and this is what we found:

At Wreck Bay on Chatham Island (Porto Chico on the chart, but now Puerto Baquerizo Moreno) there came aboard the *Mary Pinchot* the Captain of the Port, the Governor of the Islands, the Commandant of the garrison of seventeen men, the judge, the postmaster, and the other civil and military officials, all in a single pair of smartly cut breeches. He promptly gave us *pratique* (which means the keys of the city), and we used it to set out over the five-mile road to Progreso, where more than half the people of the Galapagos have their homes.

They are nearly all Ecuadorian peasants who for the most part can neither read nor write. Their habits are as simple and frugal as you would expect on a standard wage of 30 cents for a legalized 8-hour day. They regard gunny sacks as garments; their clothing is patched beyond anything we ever see at home; their chief tool and weapon is the machete; and a donkey is their only means of transportation except their own feet.

They are small, strong, nimble, and brown, and I do not doubt that when displeased they may turn to direct action with the machete as suddenly as others of their race on the mainland of South America, from which they come. But they showed no sign of fierceness to us.

At Progreso, a village of thatched houses walled with split sticks of bamboo which we reached through a mile-long avenue of planted trees, we found a sugar mill and a Ford truck, both temporarily out of commission. Here also was Señor Rogerio Alvarado, representative of the owners of the island, and his assistant, Señor Cobos, both of whom spoke little English but excellent and idiomatic French. Alvarado was manager of the sugar mill and of numerous plantations of coffee, cane, and fruit.

The old stone house in which Señor Alvarado welcomed us and gave us lunch, with delicious native coffee, was a striking reminder of old times. Its highly ornamental but also highly effective iron grills on doors and windows evidently dated from a period when it was not only a dwelling but also a fort.

Before we left Wreck Bay Señor Alvarado sent us down fruit enough to load our launch, and here is what we paid for it:

4,000 oranges at 40 cents a hundred	$16.00
1,000 lemons at 50 cents a hundred	5.00
500 alligator pears at 1 cent apiece	5.00
25 pineapples at 3 cents apiece	.75
20 stems of bananas at 10 cents per stem of about 100 bananas	2.00
4 gunny sacks of guavas at 20 cents a sack	.80
	$29.55

About the Galapagos oranges it is hard to speak in moderation. At Chatham Island they are entirely delicious, and even though you only get five for two cents they are certainly worth it. They grow on trees that reach a height of fifty feet, and are so common that the Chatham Island people eat oranges instead of drinking water while at work in the drier parts of the island.

Fish in the sea and birds in the air. Life feeds on life

The nearest a Man-o'-War can come to shaking hands

Bourget, the second mate, and his Fatu Hiva Tuna

Giff caught our biggest Wahoo six inches longer than himself

The Chief Engineer, a great fisherman, and his record Crevalle

At Floreana (Charles Island) the oranges are even better—the best I have ever eaten anywhere—but you must walk three hours into the interior of the island before you find them.

One day C. B. and I took a long ride with Señor Cobos among orange, banana, and coffee plantations, through rich grazing uplands, and under forests of guava trees, whose delicious golden fruit literally littered the trail. Ten miles back from Wreck Bay we stopped and had coffee with two delightful Norwegian girls who run their father's plantation. They had been expecting us for months, for they had read all about the *Mary Pinchot* in the New York *Times*. Indeed they had waited so long for our arrival that when a long anticipated little donkey was finally delivered by whatever stork brings baby donkeys, they promptly named it for Giff.

At two places we found handfuls of Norwegians, three or four together, kindly and simple people, eager to help us in every way.

Again at Villamiel on Albemarle Island, against whose inhabitants we had been gravely set on guard, we found a courteous Ecuadorian gentleman, Señor Carlos Gil, his wife, and his nephew, with whom C. B. and I, and four others of our party, rode twenty miles into the interior and spent the night. They knew of our expedition from pictures in a Guayaquil newspaper.

Here, as at Progreso, we met nothing but the most hospitable kindness. When we came away Señor Gil filled our launch with fruit, sweet potatoes, coffee, and coconuts, for which we were not allowed to pay, to say nothing of a sucking pig presented to C. B. in the interior of the island and the six living Galapagos tortoises which had already been sent aboard.

One of these tortoises, weighing 154 pounds, came from Cape Santa Rosa and naturally was named Rosie. As told elsewhere, Rosie turned out to be no lady, but after a period of sulks, he became the life of the party on our long jump to French Oceania.

To a smaller specimen Señor Gil gave with his own hand a magnificent polish with shoe blacking before offering it to C. B. Within a week it was sitting on her lap eating bananas out of her fingers. Of course we called it Shoe Shine. He or she, that name would fit.

At Villamiel even the Ecuadorian peons, whom rumor classified with Chicago racketeers, went out of their way to be polite. They made us little presents of fruit, they heaped food and native tobacco on the members of our crew who came ashore, they respected scrupulously every article we left lying about, and if they had homicidal intentions repressed them sternly. They smiled and smiled and were no villains.

In a word, we met the Galapagans, so little esteemed by other voyagers; we visited every one of their settlements; we dined at their tables, as they dined at ours; we slept in their houses; we went back with them far into the interior of their islands by ones and twos and larger parties; and for their treatment of us first, last, and all the time, we have nothing but praise. We like them, and we hope they like us.

NOTES ON THE GALAPAGOS

In 1835 a young English naturalist, Charles Darwin, landing on the Galápagos, was thrilled to see a world of animals until then nearly unknown. At that time, when all living beings were supposed to have come into existence by direct acts of creation, there was no special problem of the origin of island faunas apart from those of the continents. It was the significant relationships he noticed between the animals of the several islands, and the affinity of all to those of America, which led Darwin to speculate upon the questions of relationship and origin, and finally to the doctrine of evolution.

Nearly everywhere on the Galápagos one walks over fresh or weathered lava. It was natural that Darwin took for granted that the islands had been built up from the sea bottom by their volcanos within comparatively recent times. Wallace and other followers of Darwin accepted this view that the islands "have been formed by submarine eruptions" and have never been joined to continental America. According to this oceanic theory, animals and plants reached them by various fortuitous means: by the wind, which could bring fern spores, seeds provided with pappus, spiders, insects, birds, and bats, or seeds may be carried adhering to the plumage or the feet of birds, or even in their crops. Such stragglers are apparently still reaching the islands, and stand a chance of becoming resident if they find suitable conditions, mates, and so on. About twenty birds of this class have been recorded. Thus it has come about that some mainland species, chiefly of plants and insects, also occur on the Galapagos. It is clear to any naturalist that there are both old and new elements in the fauna and flora.

Another chance means of transport is by ocean currents, with or without the aid of driftwood or so-called "floating islands"—masses of logs held together by growing plants, which may be swept out of rivers, carrying living animals. Such natural rafts have actually been seen off the mouths of great rivers, such as the Amazon, Orinoco, and Ganges. A raft, green with foliage and bearing living animals over the sea, is a pretty picture, but anyone who has been at sea may be excused from considering it seriously when a voyage of 600 miles or more is in question. How many animals could survive the inevitable drenching by the waves? Even if the raft held together, what chance is there of making a landing on rocky islands where good landing places are exceptional.

Purely dry land plants and animals, such as the Galapagos Tortoises, would probably never be trapped on such a raft. Though Tortoises float, it is not likely that they would survive long in salt water, or make a landing through the surf. Beebe records testing the floating powers of a Duncan Island Tortoise. It swam feebly, and died shortly after the test, the lungs and intestine heavily congested, probably from swallowing salt water. Much the same objection applies to the introduction of land snails by rafts. The Galápagos species are never found living in the seashore vegetation but only far beyond the zone where drift is cast up.

The powerful Humboldt Current, sweeping up the coast of Chile and Peru and out among the Galápagos, no doubt brought the hair seal and the penguin to the islands, but no true land animals, though it is said that driftwood is thrown up on the southern shores. If ocean drift is ever effective we would expect Southern Hemisphere land animals in the Galapagos from this source, whereas the affinities of the fauna and flora are with middle America and Mexico.

It appears that while the oceanic theory accounts satisfactorily for the presence of certain classes of animals and plants, there are others, such as the giant tortoises, snakes, land snails, and many plants which it accounts for only by hypotheses which seem rather far-fetched.

A rival hypothesis was advanced by Professor George Baur of Clark University, distinguished for his work on reptiles, who visited the islands in 1891. He held that the Galapagos are continental islands. "They all formed at a past period one large island, and this island itself was, at a still former period, in connection with the American continent." Baur emphasized the fact, first noticed by Darwin, that the fauna and flora are "harmonic." That is, all of the main types of animals, tortoises, snakes, ground finches, mocking birds, land snails, are represented on all the high islands by closely related though distinct species. Every island has its strange treelike species of prickly pear, and so on. If each island had been peopled separately by means of oversea waifs it is incredible that there should be any such uniformity. These facts leave no reasonable escape from Baur's view of a single large original island, which by subsidence was broken up to form the present archipelago, leaving a stock of the ancestral animals and plants on each island.

Baur's further hypothesis, that this island had been, in or before middle Tertiary time, part of a peninsula extending from the mainland of Central America, is by no means so fully demonstrated. Agassiz has mapped a submarine ridge with lower contour at 1500 fathoms in that position. Such a peninsula would be roughly comparable to Lower California, which is even longer, with a knot of high mountains at the end.

Baur's view has about as many adherents as the oceanic theory. Most advocates of the latter oppose it vigorously. The principal objections are as follows: It involves a former continental extension beyond the present continental platform at about 100 fathoms. This involves geologic considerations which cannot be regarded as settled. The Galapagos have basaltic lavas, not andesite like the South American volcanos. This does not seem significant, since they do not belong to the Andean system in any case. Basaltic lavas occur in Mexico.

By the absence of mammals, frogs, and salamanders, the Galapagos are like truly oceanic islands; but as all of these islands have undergone intense and repeated vulcanism it is likely that such animals would not survive the heat if they had originally been present. During the eruption of Narborough in 1825 the temperature is said to have risen to 147° on the coast of Albemarle, four miles from where lava poured into the ocean. Probably many Galapagan animals and plants have been exterminated by the tremendous lava flows.

Perhaps the strongest objection to a former continental connection is that a greater variety of animals would be expected in a fauna derived from a region so prolific as Central America.

On the whole, it appears that neither of the opposed theories of the origin of Galapagos animals and plants satisfies all of the conditions. Is it not more likely that the stock of older, more peculiar forms, which evidently stopped reaching the islands a long time ago, dates from an ancient time when the Galápagos were a peninsula, and that the fauna and flora have been increased from time to time, up to the present day, by the arrival of certain forms which are known to be capable of oversea transport?

Far more hydrographic work is needed to show the actual contour of the ocean bed, now known by very few lines of soundings. Only the birds and perhaps reptiles and plants have been at all fully collected and studied. It cannot be doubted that equally intensive work on other groups will give much more evidence, and allow us to penetrate further into the mystery which veils the animal and plant life of these alluring islands.

HENRY A. PILSBRY

VI

FISHING TALK

IF YOU happen to be fishing, and you get a strike, and whatever it is starts off with the preliminaries of a vigorous fight; and by and by, looking down over the side through the glassy water, you see a rosy golden gleam, the mere specter of a fish, shining far below in the clear depths; and when you look again a sort of glory of golden light flashes and dazzles as it circles nearer beneath and around and under the boat; and after a real battle there comes to gaff, to your wonder and delight, the most incredibly brilliant fish fancy can picture, looking like nothing so much as an insurrection in a paint shop; and you land a slim and graceful and impossibly beautiful three-foot goldfish, whose fierce and vivid yellow is touched around the edges with a violent red—when all these things happen to you, fortunate but bewildered fisherman, then you may know you have been fishing in the Galàpagos Islands and have taken a Golden Grouper.

And having caught this fish-out-of-a-dream, and wondered at him and gloated over him, and exhausted your stock of adjectives without finding one that fills the bill, and tried to make an adequate description of him as vainly as I have tried—if then you will take the amazing beauty to the galley and ask the cook to broil him with all the consideration to which he is entitled, you will thank me for the suggestion, for if there is anywhere a better Grouper than the Golden One it has never come under my knife and fork.

The common Grouper of the islands, which the Galapagans call Bacalao, is a thickset sturdy fish of an undistinguished gray in color, ugly, if you choose to call him so, extremely common alongshore in many places, and well worth taking on light tackle, if you can keep him out of the rocks. And also well worth eating afterward. But neither in gameness nor tastiness can the Gray Grouper begin to compare with his illuminated relative.

The first Grouper that came aboard us in the Galapagos took the fatal step in Darwin Bay at Tower Island. It was a very mild beginning for our Galapagan fishing, especially because a gorgeous Sailfish had shown himself, sail raised, as we were approaching Tower, and a great Manta had met us in the entrance to the bay.

But when this poor relation of the Golden One took hold of Giff's handline as the launch worked its way through the rocks to the landing place, while the Man-o'-War Birds and Boobies flew over almost within arm's reach, there was interest and excitement in plenty. Nobody knew what Giff had, and whatever he had was welcome. So when the good Gray Grouper met the gaff and hammered out his protest on the bottom boards, it was in the middle of a circle of heads crying in chorus, "That's the same kind we caught at Cocos Island"—which it unquestionably was.

I am persuaded that the Golden Grouper is a separate species and not a mere sport or color variety, as some maintain—as it were a golden albino. My opinion has no scientific basis, and possibly never will. If so, it will not be the first time I have ever been fooled by a fish.

We caught Gray Groupers everywhere. Time and again they took our baits within a yard of the gunwales. They were voracious and ubiquitous—the rank and file of the fishy population.

Around every island of the Galapagos where we had a chance to try it out, there appeared to be a belt of these Bacalaos with a semi-occasional Golden Grouper sifted in to relieve the gray monotony. Of the fiery ones we took only four out of perhaps a hundred Groupers all told, many of which, of course, went back because they were not needed.

The Grouper belt was in fairly shallow water—up to forty or fifty feet, at a guess. Here you might also take Bonitos, apparently of two or three different kinds, with long black stripes running lengthwise of their silvery bellies, and with fiercely sharp teeth set on the very edge of their mouths. Those we took ran from perhaps three or four to seven or eight pounds. They all saw their duty the instant they were hooked, nailed their banner to the mast, and made beautiful swift last-ditch fights, after the manner of their kind, on 6-thread or 9-thread lines.

Since Bonitos appear to range widely through the ocean, I may be right in thinking I have taken one of these species, or perhaps two, or at least their close relations, off the coast of California and off the New England coast. All I ever caught were hard fighters, good to look at, and just as good to eat.

Another of the fish we took in the Bacalao belt, and in deeper water as well, was the Little Tunny (*Gymnosarda alleterata*). This is an intimate old friend of mine, and about its species I have no question. I am persuaded that here is the finest game fish that I, at least, have ever taken, and my list is not a short one. The Little Tunny is just as supreme a fighter in the water as its namesake, Gene, on land.

You could describe it as a slim miniature Tuna of ten or twelve pounds. But that would not tell the story. The Little Tunny deserves a better name than one based on the idea that it is just a Tuna of a smaller growth. It is far and away more beautiful than the common Tuna. It has all the Tuna's finished firmness and streamline smoothness of contour, all of the little depressions and cavities in which to lay away its fins when, exposed, they might become a hindrance to its swiftness. It has the surface of the eye accurately moulded to the general outline, and every other device of flashing speed. But it has them all in a body of much more graceful proportion of length and thickness and far more lovely surface.

Gene's small relative (of which he has no need to be ashamed) looks as if there had been poured over its head a liquid decoction of mother-of-pearl, and this marvelous solution, with forty kinds of colors in it, had run down from the head more than halfway to the tail in a coruscating triangle of iridescence. The belly is silvery white, sometimes with a faint glaze of pink, and carries near the gill covers certain small black spots which are characteristic of this species. There are usually one, two, or three of them, but I counted up to eighteen on one side of a fish Giff took just outside Wreck Bay off Chatham Island.

All this beauty and fitness of shape and color would seem to be enough for any one fish without the supreme quality which multiplies the value of all the rest. That is the fact that the Little Tunny makes its fight entirely on the surface, and makes it with a speed and determination that set it in a class altogether by itself.

Time and again I have seen one of these fish take out 150 yards of line in a single rush; and do it apparently without going ten feet below the breezes. It is by odds the most thrilling rush I have ever known in any fish, the Bonefish alone excepted.

When you hook an ordinary Tuna, Bluefin, or Yellowfin, such as many of us have taken at Catalina or Block Island or off the Jersey coast, unless you have been wise as a serpent and gentle as a dove, when your fish is beaten and the fight is practically over, when he has little or nothing left but his weight to fight with, you will still have to pump him up out of the bottom of the sea. And if your fish has any weight at all in proportion to your tackle, that is likely to be a long hard job.

But the Little Tunny is a horse—I suppose I ought to say a sea-horse—of another color altogether. The long rushes which open your debate with him will be on the surface. At the climax of the fight your fish will still be on the surface, and so will he be at the end.

I first met these magnificent fighters in Block Island waters, where they arrive in the late summer, and there they have given me some of the very finest sport of my life, taking them on 3-6 tackle, which means a rod not shorter than six feet and weighing not more than six ounces, and a 6-thread line that is supposed to stand a strain of two pounds to the thread.

A reel without a handle brake and with no leather thumb brake gives this fighting fish a better fighting chance. That is the kind I use, for he deserves the very best consideration you or I can give him.

If you are a light tackle enthusiast, or even if you fish with the regulation 24-thread line of heavy tackle, and if your luck is anything like mine, you have often been bothered by trolling baits which twist or untwist your line. You have had to be constantly on your guard to see that the spinning of the bait, all your swivels to the contrary notwithstanding, is not laying your line up too tight so that the least slack results in a tangle or dangerously unlaying it. Spoons do it, jigs do it, cut bait does it with aggravating regularity. It is one of the worst nuisances the sea angler has to meet. And the lighter the line, the worse the nuisance.

When the harm is done in spite of you, you can untwist your line by cutting off your swivel, wire, and hook, and towing it awhile behind the boat. If it is unlaid, you can lay it up again by tying on a little propeller that turns the right way. But you may have it to do just when it cuts into your best fishing.

One summer, years ago, when I had been trolling for Little Tunny off Block Island, this abomination got on my nerves so heavily that I undertook to make a bait that would not twist and that would still catch fish.

My luck was good from the first. If a white rag will catch fish, why not a white lamp wick? So I took the conical lead end of an ordinary bluefish jig, passed my wire leader through the hole in it from the pointed end, then threaded it in the upper link of a chain brazed to a hook, fastened the wire in a loop, and through the loop ran a common flat cotton lamp wick about seven-eighths of an inch wide.

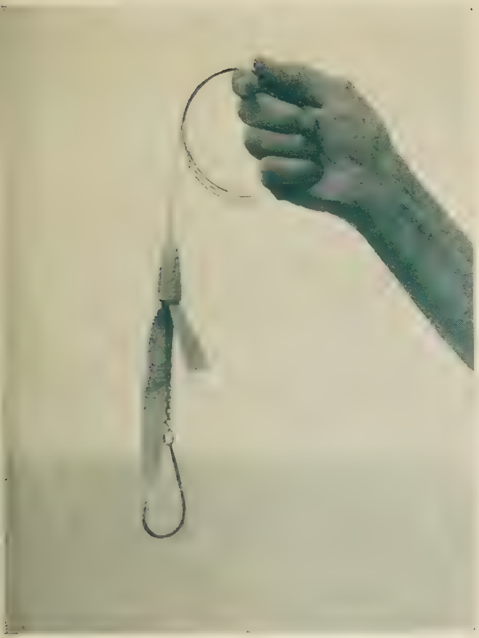
The lamp wick and the chain were adjusted so that the wick did not hang over the point of the hook, but cleared it far enough never to foul it. As a finishing touch the lead was scraped so as to show like silver in the water—and the trick was done.

This bait, properly made, never twists the line, but adjusts itself to the pressure of the water without turning over. The other essential fact is that the lamp-wick bait does catch fish. With it I have consistently had better luck with Tuna, Little Tunny, and Bonito than with any form of spoon or squid I ever checked against it—better luck even than with the regulation jig of the Block Island professional Tuna fishermen. Tried off the Jersey coast in competition with Belmar and other squids and jigs of many kinds, it had, so far as accounts have reached me, regularly done better than them all.

In the Galapagos it continued to keep its end up. For Tuna no other bait we had with us was nearly so good. And that is curious, for generally we think of eccentric motion as the thing that attracts fish. That is the principle of all the wigglers that fill the tackle shops. This bait never wiggles, never twists, never spins, but moves along with sedate dignity and the very minimum of action.

Instead of lead I have more recently used block tin for the sinkers. They stay bright longer after a scraping, and they please me better (which is a very essential thing in sinkers, or indeed in any other kind of tackle—ask the dealers), but I am not at all sure they catch more fish.

Some other fishermen, I hope, may try the lamp-wick bait and find, as I have, not only that it awakens cupidity in fish, but also that by removing the greatest



This is the Pinchot lamp-wick bait

Stiff with Golden Grouper, the fish-out-of-a-dream

The Second and his Tuna

Bud and his Tuna

LAMP WICK AND QUICK-TAPER HICKORY CAUGHT THIS SEVENTY-SIX-POUND TUNA nuisance (next to seaweed) that afflicts the sons of men who go down to the sea in little ships to take big fish in troubled waters, it adds to the serenity of angling, which promptly ceases to be the contemplative man's recreation when the line twists.

Incidentally, I have often wondered how contemplative Father Walton would have been, hooked into a racing Little Tunny.

At Block Island this prince among fishes goes by the name of Bum. Just that—Bum. It is like referring to the Grand Canyon as a gutter. Surely there is nothing in the water or out of it that looks or acts less like a bum than the Little Tunny.

I puzzled over the matter until I learned that when Tuna were bringing ten or twelve cents a pound the swifter, brighter, more elegant Little Tunny were bringing only two. The reason? Very simple. Nobody will eat Little Tunny who can get anything else to eat instead. Its flesh is as poor as its dress is rich and its performance magnificent.

Nobody will eat it, that is, except a Shark. But then, a Shark will eat anything he can swallow, and his facilities in that direction are distinctly unusual.

Just as all the Galapagos Islands are alike in being volcanic, but very different in their individual characters, so everywhere we fished we took Bacalao and Tuna, but in special places ran into special fish we found nowhere else.

Where Seymour Island comes close to Indefatigable there is a shore line on which shipwrecked sailors have struggled and died and left buried treasure behind them. One of the men who left it there, but did not die, drew and gave us a map of the very place. And we were on the lookout for it when a golden treasure of a different sort suddenly forced itself upon us.

It was a Spanish Mackerel, a magnificent creature, glorious with golden spots, but with no other gold about it except the golden opinions it earned by the fine fight it made. It is no figure of speech to say that it made the line hiss as it set its side against the pull of the twisted linen and rushed through the topmost layer of water with a speed that seemed to double its actual weight.

There was a regular pæan of rejoicing when we saw what the Red Gods had provided, and the lucky fisherman was deluged with beseechings to be careful and advice enough for a year's fishing at the very least. Notwithstanding which the fish was landed, and subsequently broiled, to the profound satisfaction of all partakers.

This fish seemed to be of a different species from those I had eaten so often and taken so often in Florida waters. On light tackle it had made such a fight that it seemed almost as if every golden spot were a dynamo to drive it through the water.

It was a sort of special dispensation that where we found Spanish Mackerel there was comparatively little trouble with Sharks. That gave us tranquil minds to relish the sport with the Mackerel, free from constant dread of the slow, sullen, and irresistible drag of a Shark that had done to our game fish what we wanted to do, but had done it first.

Every time a Spanish Mackerel was brought near enough the launch for us to tell what we had hooked, a hungry and impatient noise, like a newsboys' picnic just before lunch, proceeded from the assembled multitude of voracious spectators, for these fish were as good on the table as their chisel-like noses, slim bodies, and powerful tails made them good in the water.

We had no chance to try the Spanish Mackerel on 3-6 tackle, and it was our serious loss. On a sensitive rod and delicate line they would have given us sport over which we would still be licking our chops. That remains for another time.

Swift as the Spanish Mackerel was, there was another even swifter—the fish with the funny name. The Wahoo is one of the very swiftest of game fishes. Occasionally one is taken off the Florida Keys, and when that happens the whole fishing colony buzzes with excitement.

Wahoo is American for the true name of this fish. Just as Key West is American for Cayo Hueso—Bone Key—so Wahoo represents our spelling of the Spanish Guahu.

At Hood Island we found Wahoos in schools. It was most aggravating not to try conclusions with them on rod and reel, but the work of our scientific men was too pressing to make the launch available for hour-long struggles with big fish, and we were forced to be content with what we could pick up on the handline as we ran back and forth between the Albatross rookery and the ship.

At one point, close to the northeast shore of Hood, and not far from the southern point of the island which we called Gardner Hood (to distinguish it from another Gardner Island a few miles away), Giff, who was fishing with the handline, had strike after strike—the fiercest kind of strike—and hooked and lost fish after fish without being able to tell what they were. Finally the fiercest strike of all gave him the fight of his life.

Giff yelled and the launch was stopped. But the fish bore off with a power and speed that actually made the heavy handline hum though the water. It was pull boy, pull fish. When finally, with gritted teeth, Giff got most of the line aboard, the fish saw the boat, yanked the line out of his hands, and went off in a rush that made the heavy cotton sing like a bowstring when the Wahoo finally brought up against the knot that tied it to the gunwale.

Once more the slow, straining, gruelling tug-of-war went on. Little by little the boy brought the great fish nearer to the boat, and once more, frightened by the sight of it, an unseen power snapped the line out of his hands and ran out the full extent of it.

Gradually, however, weight, muscle, and a solid footing to pull from began to tell, and the Wahoo, by no means exhausted and struggling valiantly still, was finally brought alongside. It smashed and lunged and shot around in a way that threatened to free it half a dozen times. It threw water all over every one of us in the stern of the launch, and then soaked us again, and still it would not yield. But at last the gaff found it, and the gaffer held, and the fish was safely worked into the skiff we towed astern.

It was a magnificent creature, the largest of its kind I can remember to have heard of—sixty-eight pounds in weight and sixty-eight inches long—six inches longer than the boy who caught it.

Wherever we fished in the Galápagos the Little Tunny were reasonably plenty, and sometimes much more than that. But the Tuna were even more so. The ordinary short-finned kind was less numerous than the gorgeous Allison's Tuna with its long pectoral fins, its flashing yellow covering, and the two winglike dorsal and anal fins that stand out like curving lateen sails from the smooth surface of its torpedo body.

In the first few minutes after this fish came flaming out of water it was almost unbearably gorgeous—full of violent colors and reflections so vivid that the contrast of certain plain white markings on its side made its coloration seem almost vicious. But it lost its hues so rapidly that we had great difficulty in photographing its original color scheme.

Allison's Tuna we took with the lamp-wick bait on rod and reel, when it fought and acted like its less spectacular brothers. With handlines we collected many for the galley, both from the *Mary Pinchot* as she was running in and out of harbor and between the different islands, and from the launch as she went about her daily scientific business. And the more we ate the better we liked them.

There seemed to be a sort of Tuna belt corresponding to the Bacalao belt, but lying farther from the coast. Very roughly, it might be said to run from a few hundred yards to five miles offshore. We caught Tuna also farther from land and nearer the beach, but in general there seemed to be more of them in this belt than out of it.

The Tuna that accepted our invitation and came aboard were none of them giants. They ran, most of them, from fifteen or twenty to thirty-five and forty pounds. Only two of those we took were over forty, but I am entirely certain the big ones would have been bending our rods if we had had the time to look them up. That happy investigation is still ahead.

Concerning salt-water rods I am unorthodox. I like them to bend easily, which is not so very heretical, but I also like them to stay bent, which is heresy of the very worst. Any fishing tackle dealer will tell you so.

Fishing is pleasanter with a limber rod. When it gives easily to every impulse from the fish you keep in better touch with him, know better what he is about, and, at least in my opinion, relish the sport more keenly. It is very much as though your heavy tackle were light tackle, or your 9-thread line a 6. A limber rod adds delicacy to a sport that is always vigorous and sometimes rough.

Another reason is that the shorter the distance from your reel to the point of your rod, the less advantage of leverage the fish has against you, and consequently the less hard pulling you have to do against him. That is why I prefer the limber hickory for heavy rods, and for some that are not so heavy. After even moderate use, that unapproachable rod material takes a permanent set. Unlike the better grades of split bamboo and greenheart and certain others, it refuses to spring back almost or altogether into shape after a heavy struggle.

For the same reason I regard two rows of guides on a salt water rod as the abomination of desolation, because it can have only one purpose—to prevent your rod from taking a permanent set, which is the very thing you want, or ought to want, your rod to take. You weaken it when you straighten it, and that is simply poison.

In practice this idea seems to work out. I find that, lacking some part of the strength and much of the endurance of thirty years ago, I can still handle heavy fish with satisfaction and moderate efficiency by using a hickory rod that has been bent times enough to stay that way.

An ancient Murphy hickory, a battered old warrior that I paid all of six dollars for a quarter century ago, is mainly responsible for this aberration. That rod has taken nearly everything from Sculpins and Codfish through Tuna and Tarpon to Jewfish, Sharks, and Marlin, and it seems to be as good as ever. But permanent is a feeble word to describe the set that is in it.

When I first got into my head the conception of a specially limber rod with a permanent set, a rod strong near the hand but very pliable from there to the top, I started to whittle one out that would suit my fancy and give me a chance to put my theory to the proof. But after some experimenting, other matters of very minor importance got in the way, such as politics and giant power and the recollections of a misspent life, and the rod had to wait.

So I was able to taper to my satisfaction a seasoned rod blank of second-growth hickory only just before setting out for the South Seas. Now that I have had a chance to try this rod on moderately heavy fish, I am glad to be able to report to an anxious world that my theory seems to work out.

For example: Giff and I were trolling a few miles off Wreck Bay at Chatham Island when he hooked and promptly landed a thirty-five-pound Tuna on his handline. Another fish struck my lamp wick at almost the same instant, and having got himself hooked, seemed to think that ended the matter so far as he was concerned, and that any subsequent proceedings would have to be taken by me. He just lay there and did practically nothing.

Naturally enough I assumed that this fish belonged to the same school and was of the same size as the one Giff had just taken, and that it wasn't making a lot of trouble for the simple reason that it wasn't able.

So, having nothing else on my mind, and this being my first fish of the day, I proceeded to start a rough-house. I put my back into it, yanked at my tackle instead of pulling steadily, lay back against rod and line until my body was horizontal, pumped more and more viciously as what I took to be a thirty-five pounder refused to yield to treatment, and generally took chances I would never have thought of taking in the early stages of a fight with a fish of any size.

This went on for ten or fifteen minutes, and still it seemed to get me nowhere. My fish ought to have been at the boat in half that time. So I got rougher yet. Using brute strength and no brains, I gave the 24-thread line and the specially limber hickory rod (the very one I have been telling you about) everything I thought they would stand, and perhaps a little more.

At each rush I made the fish pull against a heavy brake instead of letting him run. Getting more and more virtuously indignant every minute at the stubborn resistance of what I thought was no great shakes of a fish, I bent the slim rod until everyone but I thought it must break, and I wasn't so very sure myself. The water sang where the line cut it, the line on the reel was as hard as a stone, my hands were beginning to think about blisters, and still the fish held out.

The longer this lasted, the harder I worked, and the more the rod bent, until it was almost a semicircle. Then the fish swam straight below the boat, back and forth and back again, and that was worse than ever, for the pull was straight up and down. But still the rod, like the fish, held on.

At last the fish came into sight—at first a mere gleam in the water, and then his full side. This was not even a distant cousin to the fish I thought I was fighting, but something else again entirely. This was a real fish.

At that sight my proud spirit was entirely quenched. I was not only humbled, but excessively anxious. This was serious. This fish amounted to something and required to be treated with respect. I threw off the brake, let my thumb take its place, and began to talk to the gaffer as if he had never seen a gaff in his life.

Round and round went the fish in the final circle all deep water anglers know so well, swinging down into the water near the boat, and rising to the surface at the other side of his swing. After half a dozen circles the gaffer struck, and the great fish, thoroughly beaten, yielded without another struggle, and the fight was over.

And that is the story of how the lamp wick and the quick taper hickory landed the largest Tuna of the trip, which, twenty-four hours out of water, still weighed seventy-six pounds. My record up to date.

VII

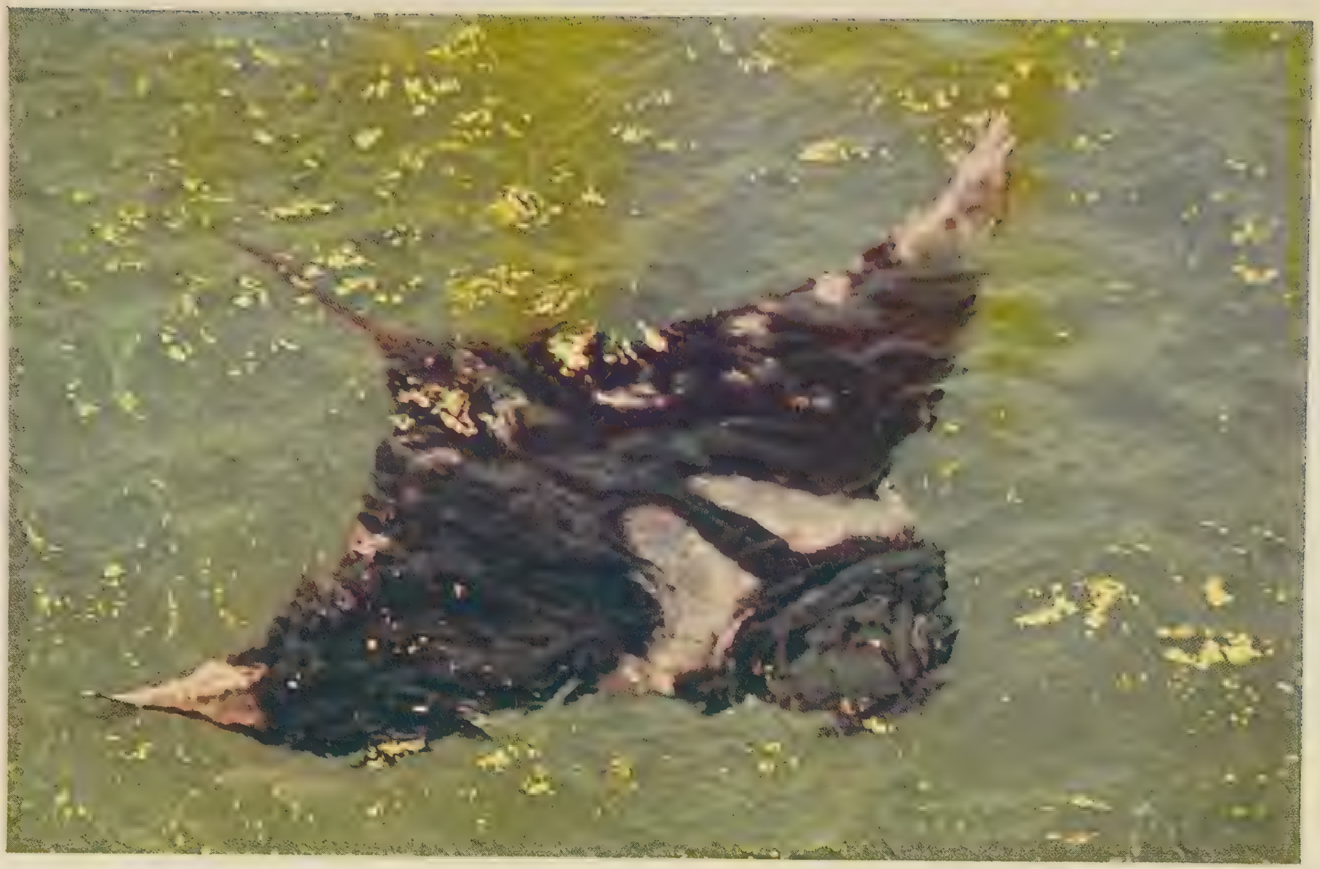
SEA BAT AND WHALE IRON

EXCEPT for Whales, Walruses, Krakens, Sea Serpents, and Giant Squids, which are not really fish at all, there are not many fishes in the sea whose weight is reckoned in tons.

But as we came into Darwin Bay on Tower Island the very morning we first sighted land in the Galápagos, one of the ton-weights met us just inside the entrance. It was a Sea Bat or Manta or Devil Fish, or Sea Devil, Devil Ray, Giant Ray, or pretty much any other name that suits your fancy. Obviously the men who named it knew little about it, except that (to quote Walt Whitman via Elmer Davis) it was something pernicious and dread.

This much-named and much-dreaded fish, which is said to destroy pearl fishermen by enveloping them in its vast wings (which I very gravely doubt), is a kind of exaggerated skate. Whatever else may or may not be true about it, its bigness and strength will not be denied by anyone who has had to do with it.

Darwin Bay is the crater of an old volcano, once full of fire, but now full of water. And full of Sea Bats too.



The Sea Bat—monarch of all he surveys

It is an eerie place. Around nearly its whole circumference are black basalt cliffs, too steep to climb, which fall vertically into the black water. What deeps lie below its surface we do not know, for the naval officers who undertook to survey it found no bottom in the middle with a sounding line of 450 feet. What anchorage exists is very dangerous, with depths entirely misrepresented by the chart.

One edge of the vast crater is broken down into a passage that lets in the sea. Outside of its headlands on either side the great Pacific roll breaks over formidable reefs and against sheer cliffs and rock-piled points. Hidden behind bird-whitened rocks in an inner corner is the only landing beach, and there is nothing green about the shores but a bunch or two of mangroves drawing a precarious living from rocks that seem wholly unable to support them.

In these surroundings, with a stiff trade-wind breeze blowing into the harbor, Giff and I went off that same afternoon to try conclusions, if we could, with a Manta, of which a new species had been reported from Tower Island but never taken.

We went with three others in the 22-foot Seabright dory with its 20-horsepower engine, which had been equipped for just such fishing, and we started to make the circle of the bay. The Seabright carried a tub of 200 fathoms of 12-thread Manila line, made to the specifications of standard size whale line, and a whale harpoon and lance.

As I stood in the bow of the launch, with a coil of line in my left hand and the hickory harpoon handle laid across the gunwales, it all seemed too good to be true. After long years of planning and waiting, I was in the Galapagos at last. And almost in the bodily presence of the great Sea Bat I had dreamed about so often and with such great desire.

Things kept getting better and better. Within a very few minutes we caught sight of one of these huge incredible fishes, whose wing tips were breaking water every moment. It seemed simply enormous.

And surpassingly strange too—pernicious and dread, and no mistake—a creature from the antediluvian world that somehow had survived into our time. A pleasant thrill crept up my spine. This was what we came for.

Soon we could see the outline of the great fish through the dark water, as it swam slowly along. It was like a barn door just under the surface—a big barn door—or, more exactly, like a slightly warped square with only three corners, the fourth cut off to make room for the cavernous mouth with its two arm-like feeders, and at the opposite point the long slim tail serrated with prickly spines.

The Manta, waving its way through the water with a motion that looked like flying, paid us not the slightest attention. I imagine there are few things it ever has to dodge. It was so fearless that I have no doubt we could have driven the launch squarely over it.

I saw that everything was clear, the line running freely through a heavy iron staple in the bow, the line knife ready to cut if necessary. I braced myself, raised the harpoon in both hands, balanced it, pointed with it at the fish to guide the steersman, and waited. But not long enough. I was too much in haste and threw too soon.

My left hand guided the iron, my right, it's palm against the butt of the harpoon pole, drove it with all the power I had. It seemed to strike just where I aimed, and checked and stood and quivered for a moment before the Manta snatched it under water.

But somehow, I could not tell just how, the throw went wrong. The fish was fast sure enough. In a powerful, driving, surging rush it took out 200 yards of line in spite of the best we could do to stop it. The launch began to move briskly through the water behind the flying Bat. We settled down grimly to the long task of landing our game. And then the iron drew.

All we had to show was the shaft of the whale iron bent into half a circle. Whatever the reason, our fish was gone. Hard luck, however it happened. But the fisherman who cannot take hard luck with the good had better not go fishing.

The line was hardly coiled back in the tub and the soft iron shaft straightened before another Manta hove in sight. Again the examination of our gear, the tense approach (Giff in a silent fever of excitement), and the driving throw.

Again the iron seemed to go right home. Again the fish was off in a tremendous rush, that simply reeked of power. Again we settled down—and again the iron came away. It seemed as if the devil was in the fish as well as in the name.

But bad luck runs out if you keep going long enough. Far off in the middle of the bay still one more Sea Bat showed its black wings. Here was another chance.

Everything was ready once more. We started for the game full speed ahead, and in our zeal we almost overran it. Suddenly, deep in the water, I caught a glimpse of its great back melting out of sight across our bow.

There was no time to take aim—barely time to throw. But this time my luck held good. The pole stopped short with a sort of chug—stopped as if it had struck bottom instead of the fish—and the line literally hissed through the chocks as the startled Manta tore away.

We tried to check it. But this Sea Bat went as fast as the traditional land bat out of Hades. It went so fast that when it came to the surface for an instant to thrash about we could hardly believe it was ours, it seemed so very far away. Then it was off again.

Gradually the fish changed its course, but not its speed, until it was headed straight for the reef at the northwestern headland of the bay, over which a very

EIGHT MEN AND A LADY CAN'T PULL THE MANTA ASHORE

THE SEA BAT WAS FIFTEEN FEET SEVEN INCHES ACROSS THE WINGS

C. B. WATCHES G. P. USE THE GAFF

vicious surf was breaking. Already the water was decidedly rough and rapidly getting rougher. It began to look as if we would have to choose between losing the Manta and losing the launch, in which case we should have lost the Manta also.

If, however, the harpoon had a solid hold, there was still a way out. We shifted the line rapidly to the stern of the launch and headed her, first under a slow bell and then at half speed, as straight away from the entrance of the harbor and the Sea Bat's apparent destination as the pull on the harpoon line would let us steer.

At first it was nip and tuck, with the odds on the Manta. Then the engine began to prevail. First we stopped the fish from dragging us into the breakers. Then we began to drag it away from them. But only a very little at a time.

Then the strain on the line grew so severe that we were forced to slacken, and the Manta started again for the open sea. Then we stopped it and started it back. It was pull monk, pull devil, for the best part of two hours.

But gasoline and machinery in judicious combination were stronger than even this great Sea Bat. Time after time it came to the surface thrashing violently, then yielded to the steady pull of the engine, never ceasing to swim away from us and constantly lifting the long points of its wings in violent protest above the broken surface of the bay.

Without the engine we would have had no chance at all. But with it, by and large and on the whole, we gradually gained line and slowly brought the Manta under better control, although it kept its strength amazingly.

We saw the reason when it appeared that the harpoon had almost missed it and was buried not more than a foot or so inside the after margin of its right wing and not far from the tail. It had no wound that could affect its vitality in the very least, and we simply had to work it down by main strength and awkwardness.

Even after an hour and a half the tension on the harpoon line was still tremendous. Although made to hold a pull of 1,500 pounds, it was close to its limit. That part of it which ran from the boat to the fish had grown noticeably smaller, under the strain, than the line still in the boat, and it began to look as if the line might break or the iron might pull out.

So at Giff's suggestion we sank a second iron in the fish, this time a Block Island Swordfish dart, and fastened our possible prize to the launch with a second line. And it was more than lucky that we did, for only a few moments later the whale line parted, and only the line to the dart remained. Without it we should have had nothing left of our fish except the story of how it got away.

At last with some difficulty we worked our way through the reefs of the northwest corner of the bay toward the landing place. A few moments more, and we had the Manta in the cove near the beach. The launch nosed up on the sand. Three or four of us swung ashore through the light surf, collected reinforcements from the party already on land, and six or eight men finally succeeded in hauling the prize, this time really ours, far enough up the beach to be half dry between the swells.

Our Manta looked dead and acted dead. So we made sure that it was dead by bleeding it in the gills with the lance, for firearms we had none. A band of reddened water wide as a road, with half a dozen Sharks in it, floated off a hundred yards along the shore while we photographed and measured and marveled. It was by far the largest fish I had ever been concerned in catching.

For years past, whenever I have killed a head of big game, remorse comes straightway to afflict me. So now the bitter tooth began to gnaw. It may be no worse to kill a Manta than a Muskrat—perhaps not half as bad. But I was not a little oppressed by the bigness of my kill.

The breadth across the wings was fifteen feet, seven and a half inches. It was just fifteen feet from the end of one of the feeder fins near its mouth to the end of its tail. Its thickness through was over two feet.

As it lay on the white sand the thing looked simply prodigious. Its color was a very dark gray or black, carried in a thin slimy outer skin that came off easily on the hands. It was covered all over the back and the top of its wings, and partly also under the bottom of the wings, with very fine prickles, which cut our hands, as we tried to turn the fish over, until they were almost as rough as the skin itself. The enormous mouth, about the size and shape of an ordinary suitcase, was roughly two feet wide, with the eyes set in line with it just at the outside base of the feeders.

The two feeders or lip fins, rolled up, looked like solid horns five or six inches through, but unrolled they became two wide flippers, most convenient, if that is what they happen to be used for, to shovel food into the cavernous mouth. The Manta's teeth are small, flat, and tubercular, which last implies no reflection on the general health of the fish.

We cut out the harpoon and planted it in the head to have something to pull against while we tried to drag the Sea Bat out of water, but eight men could scarcely budge it even when half-afloat.

Then, having photographed its back, we came to the question of its species. Every other Manta I had ever seen was black on top and white beneath, but this one, at least so far as the wing tips were concerned, seemed to be black on both sides. It was necessary to decide the question, so we hooked the launch to the Manta once more, shoved and pulled all together till we got it off the sand, towed it out into deep water, turned it over (which eight or ten of us had vainly tried to do ashore), and beached it again, belly up, and photographed the curious pattern in white which occupied the center of the black undersurface.

In the two stomachs, for it certainly seemed to have two, there was nothing but an oozy mass the color of purée of carrots and of just the same consistency. I judged our Manta was a good deal of a gourmet, for the mass it was digesting appeared to be composed of macerated shrimps. We saved a double handful of this puréed food for the edification of the National Museum, for not much is known about the feeding habits of these fish.

The last thing we did with the Manta was to pull it out into deep water, where the Sharks might get it before it could drift back to poison the beach. Even if they did not, the birds would take care of it, for the gray Galápagos Gulls were already at work cleaning up what small pieces the dissection had left lying about while the great fish was still ashore.

Raie au beurre noir (skate wings with brown butter) is a favorite dish at bourgeois restaurants in France. So that night we had Sea Bat wing for supper. It was streaked like bacon and rather tough, by no means delicate in flavor, but perfectly sweet and edible nevertheless. On the whole, I prefer Shad.

Pictures of both sides of this fish, measurements, a large square of skin showing the white markings underneath, a generous helping of the purée of shrimp, and the long tail with its curious boss near the root have all gone to the National Museum for study.

In the meantime I allow myself to hope that my first Sea Bat may serve to introduce a new species to the scientific world.

There are plenty of Mantas in the Galapagos. We saw them not only at Tower but also at Seymour and Indefatigable, at Charles and on both sides of Albemarle. We could easily have taken more of them than we did, for I think this Manta taught us how.

Ever since harpooning Mantas became the favorite sport of South Carolina planters in the spacious days Before the War, down to the time when Roosevelt harpooned one himself while he was President, and up to the present day, no one to my knowledge has undertaken to acquire a Sea Bat with hook and line. But to take a Manta on a handline with a shark hook and a whole Grouper for bait would seem to be a reasonable ambition for any man who likes his fish in large consignments. It is one of the things I have listed for trial on my next trip.

A ton or two of Sea Bat on the end of a thousand feet of small-sized whale line might be expected to furnish contrast to Brook Trout on a dry fly. But when I gloat over it on those fishing grounds of the mind, where most of us do most of our fishing, and picture myself to me drawing this particular Leviathan with a hook, that compote of shrimps in the recesses of the Darwin Bay Manta rises to haunt me. What if Mantas eat no Groupers? You cannot bait a shark hook with a shrimp.

VIII

INACCESSIBLE INDEFATIGABLE

AS WE left Tower Island, the most magnificent sunset we had seen came to overawe us. The clouds were horizontal, blazing gold and pink, and with a color range from crimson to the most ethereal blues and greens, marvelously graduated and intermingled. It was stupendous and glorious. And serene.

The next morning some of us were up before daylight to catch the earliest loom of Indefatigable. We were between the latter and James, with the Daphne Islands on the port bow.

As the sun rose, James seemed to project itself majestically into the air, a rugged, broken, beautiful island, like Catalina in southern California in color, but far more noble in outline. Its central heights were cloud-capped, and so was Indefatigable on the other side. Far to the west, dimly seen at forty miles, rose one of the great volcanoes of Albemarle, and all the way between small islands flecked the sea.

Daphne Minor is a square precipitous rock rising to about its own diameter from the ocean; Daphne Major, an extinct crater opening eastward.

Indefatigable consists essentially of the one great volcano which poured out and made the island. Its slopes are long, gradual, and almost mathematically uniform, with a sweep somewhat like Fujiyama, broken only here and there by the cones of little craters now extinct. Except for its green-brown color, some of it reminded me of nothing so much as the interminable even slopes of Owen's River Valley, east of the Sierra Nevada Mountains at home.

The *Mary* came into her anchorage as confidently as if she had known it all her life. She dropped her hook in fourteen fathoms in the angle formed by the larger of the Seymour Islands and Indefatigable itself. It was a glorious harbor, wholly protected from the trades and quiet as a mountain lake. But the shores about us were not lake shores; black broken rocks alternated with rock-spotted sandy beaches and clumps of mangroves. The land was low and rose in small cliffs only at the southern end of South Seymour Island.

Over the high crest of Indefatigable the clouds hung all the morning and until the later afternoon. Then the superb high outline of the island appeared to us. But not for long. At sunset the clouds came back and the rain, which never left the central peak for many hours while we were watching it, returned again.

Next morning we left the ship and found a beach upon which we could land directly from the launch. The inevitable Mocking Birds were the only people

BUTLER'S MOTHER WAS WILD, BUT HE WAS THE SHIP'S SPOILED BABY

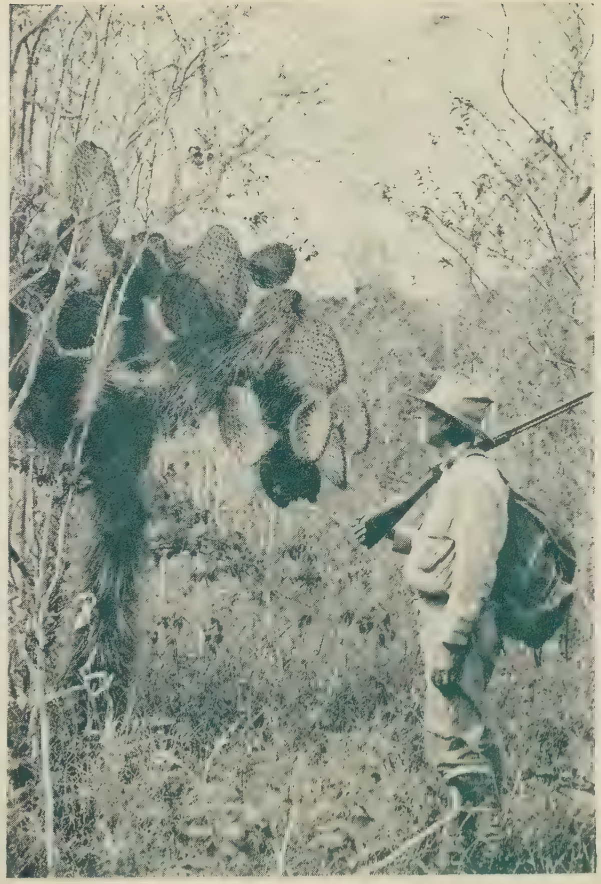
GIFF AND STIFF HELP ME DIG FOR TURTLE EGGS—NOT BURIED TREASURE

THE SAILORS HELP US START FOR THE PEAK WE NEVER REACHED

ON INDEFATIGABLE—THE GOING MIGHT WELL BE CALLED UNEVEN

Galápagos Doves were as tame as chickens

The graves of three Norwegians at Academy Bay



Prof with his sixteen-pound pack looks over a Spiney Opuntia

Cleaves carried thirty-four pounds, but was keen to continue the climb who came to meet us, along with Doves and Finches. Dragon flies, indicating the presence of fresh water, played over the beach ridge of shells and sand.

Prof and the Doctor went off for shells. Cleaves started photographing. Giff, Stiff, and the men tramped the beaches, interviewed Sea Lions, and swam in the shallow water with a keen eye out for Sharks, while C. B. and I struck off on a short reconnoitering trip into the hills.

We were determined to explore the interior and climb Indefatigable if we could, for no one could look at this mountain even for a day without longing to conquer it and know it well. Dr. William Beebe was also partly responsible for this ambition. We had read his all-too-thrilling account of his single-handed attempt to invade these solitudes.

The question was whether we could get far enough inland to strike the rain belt, over which we saw constant showers falling, before thirst overcame us. If we could find water enough along the way, we could make it. We were encouraged by the fact that, as we landed, one of the showers we counted on got off its accustomed track far enough to sprinkle us lightly.

The going might well be called uneven. Sometimes it was over streams of rounded lava boulders from the size of a bushel basket both ways. Walking over them was like stepping on open boxes of California cherries swelled to the size of kegs and barrels. Sometimes it was over stretches of tall grass, fairly smooth in appearance but concealing plenty of small rocks. Often the brush was almost impenetrable. At times the country was cut with minor cliffs which marked the ends of successive lava flows. They were broken down into square-shouldered boulders. Some of them were almost as easy to climb as a stairway. And some of them were not.

Here and there little peaks of lava rock stuck up a few feet above the surrounding country. On one of them was an ancient nest about three feet in diameter, built of sticks. The additions of many years had made it four feet high. It was a Hawk's nest, but there were no eggs. The only young things in it were two half-grown grasshoppers and a baby blade of grass.

From the Hawk's nest we looked long and carefully over the terrain, so smooth to the eye—and so rugged to the foot. I picked out a possible line of march up a long and gradual slope, which I knew looked better from a distance than it would near by. The only way to find out was to try it.

Here, as at Tower, the birds treated us as exhibits on display. Finches came to look us over from twigs two or three feet away. A Flycatcher hung about as if he could not bear to leave us. Mocking Birds walked up to within a foot or less, and proceeded with their hunting or their toilets with perfect unconcern.

For two or three days after our scouting walk we watched and talked about Indefatigable, and at last, C. B. to the contrary notwithstanding, Prof, Cleaves, The Doctor, and I got ready to make the trip. We would be out one night, and perhaps two. So we took eight jam sandwiches apiece, a pound and a half of bacon, a pound of chocolate, plenty of chewing gum (which is a great help to walking in hot dry weather), coffee, sugar, and salt, with a pot to boil our coffee in and a plate to fry the bacon.

All but Prof had a gallon canteen of water. He, because he knew so accurately how much he could carry with comfort, took only two quarts.

Cleaves brought with him a couple of flares, one of which he was to light at eight o'clock the first night out in order to notify the ship that all was well.

Cleaves had thirty-four pounds, The Doctor had twenty-six, and I carried twenty-five in my pack, plus Giff's 22-caliber pump rifle with some shot shells A. K. had given me. Prof's load was sixteen pounds. Each had a sweater and a suit of light oilskins, and one 10 x 20 tent fly of Egyptian cotton went along in case we had to camp out in the rain.

At eight in the morning the launch put us ashore at our regular landing place on Indefatigable, and we started to go as far as we could. Four of the sailors gave us a lift with our packs for the first couple of hours.

We followed the same trail C. B. and I had taken before up to the Hawk's nest, over grassy stretches and rivers of lava boulders, with some rough going. Starting southeast, we bore gradually toward the south and the head of the mountain. The going got steadily worse, and when the sailors left us to return to the ship, we in our simple innocence supposed that it was bad.

Compared to what was coming, however, it was a boulevard. After the sailors returned we four got into a newer lava flow whose surfaces and fragments had not yet lost their cutting edge. This flow was grown up with bushes, with Opuntia cactus full of spines, and with a shrub something like our creosote bush, all of which combined to cover the rocks so densely that often we could not see our footing at all.

Moreover, this flow was cracked and broken into gullies and ridges from three or four to eight or ten feet high, too wide to step across, so that we had to climb down into and climb up out of every one of them. Moreover again, the brush was higher than our heads, the sun was beating down on us with tremendous power, and there was not a breath of wind. Still our sufferings were distinctly less than those of the Early Christians or even of William Beebe.

One thing there was to be said for this particular jungle—it has few thorny bushes, though such as it has draw blood on the slightest provocation.

We had been passing occasional little dried-up pools in rocks bordered with what looked like white alkali, but I think was really a dessicated alga. After coming into the broken going, we found three or four such pools close together, this time with water in them. Most of it was covered with a dense green scum, but in one pool the water was clear and sweet. I tasted it, and it seemed to be perfectly good to drink.

And the birds! If you can imagine Mocking Birds, Doves, and Finches to be chickens, around this pool it was like a chicken yard. I think we must have seen fifty at once in spite of the denseness of the jungle.

We collected some water beetles, and leaving the water, which was well shaded with small trees, we came into the sun again. It was hot, hotter than we were to find it again in the Galapagos, but about noon we found a short green tree that made a little shade. Here we stopped for a couple of hours to rest, eat, and escape from the fierce midday blaze.

At the lunch tree more Mocking Birds gathered around us like tame domestic fowls, and some Doves came and sat like a coroner's jury on Cleaves' pack. But they were not tamer than the Mocking Bird which Cleaves had already photographed perched on my palm-leaf Old Providence hat, where he came to peck at the red ventilating eyelets in the crown.

I for one was more than glad to get my pack off. Prof, whose sixty-six years have left few traces behind, as usual lay down at once on stopping, and after lunch was asleep almost as soon as the last bite had disappeared. As an example of the intelligent conservation of energy Prof left nothing to be desired.

We started again at two o'clock. Soon afterwards it became very evident that I was holding the others back. There seemed to be no prospect of getting out of this broken going, in which we were certainly not making half a mile an hour, and it was clear that the others would have to travel very much faster than I could go to reach even the beginning of the real mountain slope that night. So at three o'clock I suggested that Prof and Cleaves, if they wanted to go on, had better leave The Doctor and me behind. They did want to go on, but they offered in a most sporting spirit to give up the trip right there, which offer I naturally refused.

Prof had already found some snails that he approved of highly, and Cleaves, though he carried the heaviest load of all, was keen to continue. So they accepted my suggestion. I confess I was very sorry, for if one of the pair had broken or even sprained an ankle, it would have meant real trouble. But there was no way I could decently interfere.

The Doctor and I filled up their water bottles from our own, gave them all our provisions except enough for our supper and breakfast, shook hands, wished them good luck, and hit the trail for the beach. We made fair progress on our return trip, for it was much easier going with a somewhat lighter pack.

At first I kept too much to the north, but after our family physician had climbed a tree or two to spy out the road, we found more open going, and then hurried to reach the beach by nightfall if possible. But it just wasn't possible, although we kept going long after sunset at the best pace I could manage.

The time came when hustling over the streams of lava boulders in the darkness was taking too much chance of a twisted ankle or a broken leg. At last we were forced to stop and camp in an open grassy spot, across which the wind was blowing briskly. We were both drenched in perspiration, so we promptly put on our oilskins and then lay down on our backs for half an hour before we tried to eat anything, which is always a wise proceeding when a man is nearly all in. Then each ate his sandwich and a little chocolate and drank a little water from his canteen. After resting a bit longer we started in to make our beds.

As darkness fell, it was a pleasant thing to see the lights of the *Mary Pinchot* gleaming three or four miles away across land and water, but growing dimmer as the full moon rose. And we were a weary but cheerful pair, with plenty of light to work by, as we started to break off the short branches of a small tree something like a downy willow, but very aromatic and full of sticky sap. Over thick beds of these twigs we spread our tent fly and doubled it over us, and that made us a comfortable place to sleep.

We failed to see Cleaves' flare, the flare of the forlorn hope, although we sought for it sorrowing that we were not along. Very plainly we saw the Dipper in the North and the Southern Cross to the South. Around the moon was a brilliant bluish area, and the light was so strong after moonrise that in case of necessity we could have traveled down over the boulder streams and through the brush to the landing place. But we were both good and tired, and we knew enough to know that the mosquitoes would be far worse around the mangroves at the water's edge than up on the hill. The Medical Corps had brought along a piece of mosquito netting, which we spread over our heads.

One thought which had been in our minds all through the afternoon was still there when we went to sleep: How were things going with the other fellows?

The day broke still and clear, with great masses of cloud over the mountain, and the spars of the ship in plain sight. We were both more than a little stiff, but had slept well, and it was good to be alive. I showed Aesculapius how to take a sheepherder's wash in a tin cup of what water we had left. If you know how, you can even manage a full bath that way.

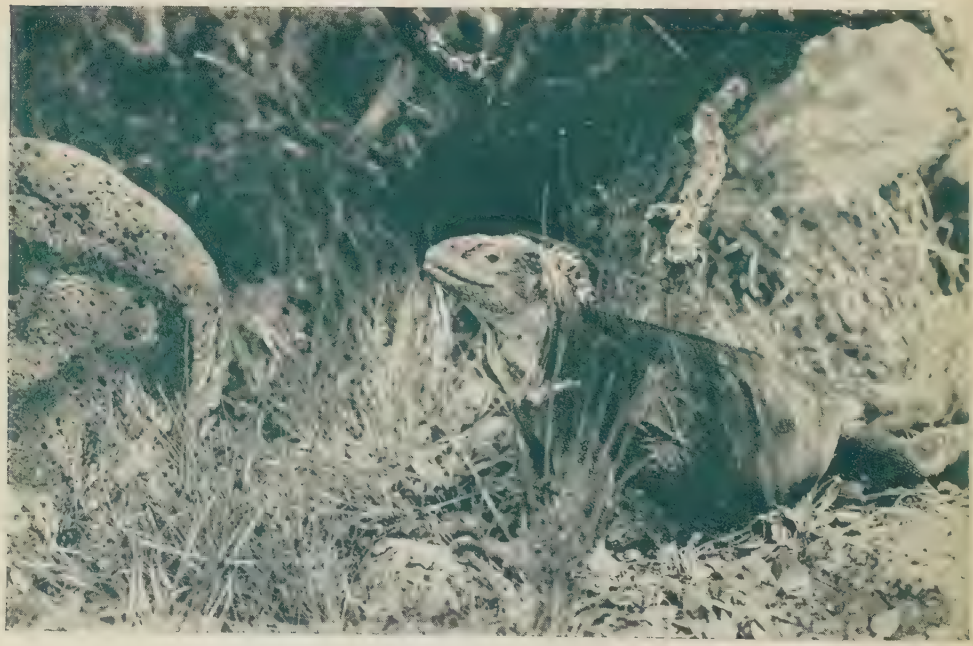
Then leisurely we ate a couple of jam sandwiches apiece, topped them off with a piece of chocolate, took up our lightened knapsacks, and pulled for the shore.

Before long we struck the trail of our safari of the day before plain in the long grass, and followed it down past the Hawk's nest to the landing place. There, while Doc took a bath, I found hard sledding trying to build a fire, for the dead leaves along the shore seemed to be substantially fireproof, and so did the little twigs.

I have lit a fire with a single match more than once in rain-soaked forests from Alaska to North Carolina, but this was a harder job. Finally, however, we got a

Furious at C. B., these two Lap Dragons bit each other

WE FOLLOWED THE TRAIL OF CON THE LIZARD IN THE DRY EARTH



CONOLOPHUS THE LAND LIZARD LIVES IN THE ROCKS good one going. The heavy hardwood burned vigorously with a clear yellow flame. The Doctor, out of his familiarity with fumigation, suggested throwing a quantity of heavy fleshy vines drenched in water over the fire to make a smoke. After that we stretched our tent fly as a signal across the face of one of the low trees. Very shortly we saw the launch leaving the ship, and that, so far as I was concerned, was another victory for old Indefatigable.

I had not, however, crept back on my hands and knees as Dr. Beebe did after his five miles.

> "Every step must be tested," says Beebe of his trip, "else a four-foot sheet of sliding clinker, clanging like solid metal, would precipitate one into a cactus or other equally thorny plant. A careless scrape of a shoe and the sharp lava edges cut through the leather like razors. Here and there a semblance of meadow offered a temporary haven. The rich, red, pasty earth supported a rather dense growth of coarse grass, . . . but after a dozen steps I shifted back, in preference, to the terrible piles of shifting lava disks, for each clump of pseudograss gave off at a touch a host of seeds, barbed and rebarbed, and the effect on clothes and skin was like a hundred fishhooks. When one of these seeds had worked inside the clothing, it meant blood from fingers and body to pull it clear, while one or more spines usually broke off, to work their vengeance at some later time. Never have I known a worse country for forced marches. . . .
>
> "Several times I almost broke my ankle on slipping masses of lava, some of which must have weighed two or three hundred pounds, and which,

> once overbalanced, rolled and clanged down to the lowest levels. . . .
>
> "I rested, squatting on my heels, for the lava was too hot to sit on for a moment. My tongue seemed three times its usual size, and I watched the blood slowly drip from the big gouges in my legs resulting from frequent falls. . . .
>
> "When at last I reached the shore I was going very slowly, and as often as not with the aid of my hands to relieve my feet, which were in rather bad shape. I lay down in the low surf, promptly had a severe cramp in my leg and foot, and went aboard the yacht. By dinner time I was all right again, but no trip on any other island, James, Albemarle, or Tower, nor any all-day hunt I have ever made in the high Himalayas, has equalled this for sheer uncertain frightfulness of one step after another . . ."

C. B. and Giff were in the launch, and we all went back to the ship in high spirits, tempered, it is true, by wondering how matters went with Cleaves and Prof.

Just to show there was no hard feeling, The Doctor and I ate another breakfast aboard the *Mary* and then while the latter, who had not often been in rough camp, took a nap, C. B., Giff, Stiff, and I went over to Seymour to look for turtle eggs. Turtle tracks we found in plenty and holes where the eggs had been, but not even an egg shell gladdened our eyes.

While C. B. and I dug imaginary eggs, Giff went off and killed himself a goat. He shot it at 150 yards with my Springfield sporting rifle and if he did not kill it dead at the first shot, he killed it at the second. It was a young billy, black as your hat, and not too rank to skin and not too old to eat. As a matter of fact we did both and the meat was good.

All through the day we had kept thinking of Prof and Cleaves but saying little. On the way back to the ship we ran over to the cove where we had left a skiff for them in case we failed to see their signal, but they had not arrived and we were anxious. Immediately after supper, however, their fire was sighted, and the launch went for them. I felt ten years younger when I got them on board again.

Both of them were tired but in fine shape. They had traveled for nearly three hours toward the mountain after we two went back. At night they found no place to stretch out and snatched what little sleep they could sitting up. The next morning they went on until eleven and then called it quits with Indefatigable. They then had made the whole distance back to the shore between eleven and six-thirty. Considering that Prof was nearer seventy than sixty and Cleaves was loaded with a heavy pack, that was going some.

Prof admitted that it really was a forced march. But they stood it like ancient Romans, and walked all the way back on their feet. Their heads were not only unbowed but unbloody, and their hardships had in no way affected their appetites.

Prof also said the country got worse after The Doctor and I left them, which was obviously impossible; and that they could see no end to it, which was likely enough. Also that they were still traveling over practically level ground when they turned back. Their flare burned the night before had shown the people on the ship that they had not yet reached even the foot of the actual mountain.

Beebe says somewhere that Indefatigable never has been climbed and never will be. I felt that way myself when Cleaves and Prof came back without getting even to the lower slopes of the volcano. But three weeks later we touched the island from the other side and then we learned that some three years after Beebe's visit, forty-five Norwegians, attracted by the promise of free land, left Larvik, with most of their goods and chattels, to start a new life upon this very island. They brought their cows, their dogs, their chickens, a huge radio set, a quantity of good sensible Norwegian pine for house building, barrels of gasoline, and fishing gear, and farming tools.

Three men died under these strange skies and were buried here in the short three months of the colony's existence. For the island's enchantment faded after the first few weeks. There were no springs, there was no coal as advertised, nor oil. No silver mines, no diamond mines; nothing but hard work in a new land.

There was not enough arable land for them to live by farming. Fish there were, but with no transportation they lacked a market. Their fishing and farming gear was used up, and with what were they to pay for more? Moreover, there was no dependable communication with the human world.

The stouter hearts among the forty-five built seven houses and made them habitable, laid out streets and named them, and cut a trail to the top of Indefatigable, where they did not find, as advertised, a lake of living water.

When we arrived nearly all that remained of the venture, besides the houses and the graves, was three young men, three dogs, and a handful of chickens. They had canned crawfish, they explained, until their cans gave out. They liked the place and could live by drying fish. The captain of a sailing vessel plying between some of the other Galápagos and Ecuador had promised to call in once in two months. They thought they would stay on.

After some persuasion we induced these Vikings to come aboard and to accept some fish lines, hooks, and provisions. And then we left them alone again with old Indefatigable, near whose peak, they told us, are the crumbled ruins of two farms, by whom built and why, and why abandoned, no one knows.

So Indefatigable had been climbed, had even been walked up over a well-built trail. Inaccessible Indefatigable may be a good title for a chapter, or a good theme for a tale, but as a statement of fact, it is an excellent bedtime story. And the moral of that is that it is never safe to dogmatize about a mountain until you have been on the other side.

IX

LAP DRAGONS

NICE animals are sometimes strangely like nice people. They do sensible, nice things. The Sea Lions in the Galapagos Islands, for instance, and doubtless elsewhere, seem to have a sort of day nursery arrangement by which one mother Seal will look after half a dozen or more babies while the other mothers are fishing or sleeping, or occupied with whatever corresponds to washing and shopping and cleaning with the mothers of day-nursery babies back home. Whether the mothers run the nursery in rotation and what they get for it I never heard.

More than once we ran across these nurseries. At Duncan Island I went in swimming with the matron and eight or ten of her charges in a tiny cove behind an islet where the mangroves stood knee-deep in the sea, and the little Seals looked out at me between the stems or swam around and about me within arm's reach, and seemed to enjoy it as much as I did, which was very much indeed.

When the launch passed Sea Lions lying on the rocks in the sun, we often called to them. Sometimes they were too sleepy to do more than lift their heads and put them down again. But often they would slip into the water and swim out and have a look at us close by, and sometimes they followed us for half a mile or so before their curiosity was satisfied.

With many pups and half-grown individuals we carried on one-sided but cordial conversations, sitting so close beside them that the Seal would turn his head from time to time and nuzzle the nearest human shoulder. Repeatedly we watched the baby get his dinner, and over and over again we patted mother and child. But this familiarity usually brought a more or less perfunctory protest.

Once when a Sea Lion pup came up to look us over, Stiff, who is perfectly fearless about animals, stepped into the water and began swimming after it. Quickly the two made a game of it, fortunately right under Cleaves' movie camera. The Seal twisted and turned, swam back and forth under and out of the water, always within a few feet of Stiff, and often within arm's reach. It certainly looked like play, and was conducted in the friendliest spirit on both sides. Cleaves called it the best human interest picture of the trip.

Another pup looked us over and then swam down to meet his mother. The two met with their heads above water, and put their snouts together precisely as if they were kissing. This was in marked contrast to the behavior of another old lady Seal and her two or three companions who, after swimming around for two or three minutes while a youngster was bawling, callously went off about their own affairs.

When you begin to think of the wild creatures as individuals, and then as friends, as in the Galápagos you inevitably must, you begin, of course, to be interested in their personal welfare. And then you discover that they have their troubles just as we do.

We have heard so much about the great free open spaces, where men are men, etc., where birds and beasts and men live only heroic lives and die nothing but heroic deaths, that we very seldom stop to think of wild creatures as sufferers from disease—indeed, from some of the very same diseases we suffer from ourselves.

On beach after beach in these islands, or hidden away in rocky crevices above high-water mark, we found sick Sea Lions. Most of them, according to our doctor, appeared to have that plague of modern newspaper readers, conjunctivitis. One seemed to be actually blind, but in fair condition nevertheless. It seemed certain that the others brought him food.

Another Sea Lion had some ailment of the teeth and the evident need for a modern dentist. Others were sick with diseases we could not diagnose, and one had been badly bitten by a Shark. These sick ones naturally hated to move, and often would scarcely raise their heads as we sat down beside them.

The birds, too, have no immunity from sickness. At Tower Island, for example, we found an epidemic of some sort among the Man-o'-War Hawks. The

Boobies nesting alongside showed no sign of disease, but of the Men-o'-War there were almost as many dead birds among the bushes of the rookery as live ones on the nests. This is not always so, for in a large Man-o'-War rookery on Kicker Rock two dead birds were all we could discover.

Even the Porpoises had their parasites, and the Swordfish we harpooned off Narborough carried about with him nine long black worm-like creatures whose roots (if that is a proper word) ran down into his flesh a good two inches.

But the strangest trouble of all happened to a Mocking Bird. The upper and lower halves of his bill had grown past each other so that he could feed only with the greatest difficulty. We first noticed him trying to eat a piece of orange, and making bad weather of it. Someone suggested that here was a case for what the surgeons call operative interference. So I caught him with a little noose on a short fragment of stick, and held him while Doctor Mathewson got the scalpel out of his emergency kit and cut the two ends even.

The last we saw of this reconstructed bird he was sitting undismayed on a branch eight or ten feet away, busily sharpening his shortened bill against a twig, his peace of mind apparently quite unruffled by what was doubtless the first and only surgical operation on a bird that has ever been performed in the Archipiélago de Colón.

The Mocking Birds gave us the most amazing exhibitions of fearless curiosity. There is a different species of them on almost every island, and we became so well acquainted with them that we regularly called them Jake, and felt the lack of them if they failed to be around for even a few minutes.

In most places we only had to sit down for a moment to have from two to a dozen of these confident and inquisitive birds come hurrying on foot or on the wing to inquire into the unusual phenomenon. They perched on our feet, they lit on our knees, they took food from our fingers, and any part of our equipment that we laid down was immediately investigated by a committee which sat on it and pecked at it and employed all the resources of Mocking-Bird technique to discover its nature and properties.

I have a photograph of C. B. sitting on the ground feeding two Mocking Birds with an orange held in one hand, and five more with another orange in the other hand. A few minutes later when I got back from hunting turtles, one of these birds and I lunched on the same jam sandwich. He was on the ground right in front of me. I offered him the sandwich, of which he promptly took a good big peck. Then I took a bite, then he another peck and I another bite, and so on till there was no more sandwich to be shared between us.

In these islands the old saying "wild as a hawk" means nothing, for the Galápagos Hawk will fly up to you when it sees you, and once one actually lit on C. B.'s hair—an experience to be recommended, according to her, only to the owners of wooden heads.

The first of the big yellow Iguanas (Conolophus) we caught was on Seymour Island. He was sitting peacefully under a cactus tree, but as we came up too rapidly he started away. The two boys and I rushed after him as fast as we could pelt, and I finally got him by the tail by throwing myself on the same—falling on the ball in regular football style.

The moment I grabbed the tail, the Iguana, which turned out to be forty-four inches in length and was wonderfully thickset and strong, made a dash at me, but having the tail in my possession I was master of the situation. Working carefully, I got a noose of doubled 24-thread line around his neck and one foreleg, and than I had him, since the line was fast to a short pole.

During the proceedings he tried to bite me repeatedly and showed a fine mouthful of sharp serrated teeth, a single row of which as I could see ran all around the lower jaw. As one of them demonstrated on C. B. a little later, a similar row runs round the upper jaw, and together they can bite to the bone.

Working carefully, I got my hand around the animal's neck and carried him back in the shade. He seemed to weigh about twenty pounds. We soon learned to put the heads of our captives into bags, after which we could leave them lying around and find them just where we left them when we came back. When they could not see they usually did not move.

Seymour is altogether different from Indefatigable. Very smooth and even in outline, it has no rivers of boulders, but here and there patches of bare stones. Nearly everywhere the grass is thick and high, broken only by occasional clumps of low bushes and cactus trees. These are so covered with spines that even the trunks have the color of the spines rather than the color of the bark, and it is almost impossible to see through the clusters.

I cut off a single spine. It was six inches in length, about as thick as the heavy wire we use for Tuna fishing, light yellow in color, straight as an arrow, with a long slim steel-sharp point, and very stiff and rigid, so that it broke off into short lengths rather than bend—altogether a most formidable weapon.

Around many of these Opuntias the grass was tramped absolutely flat, around some of them entirely worn off, by Conolophus the Land Lizard. Repeatedly we came across these tramped-down areas, with trails running from one Opuntia to another, and found in the neighborhood the particular Lizard that did it.

Later, for me the climax of strangeness came when one of these great Land Iguanas actually crawled into my lap. That also was on Seymour, where C. B. and I together had been catching such of these modern dragons as were needed for the collections.

When we came in sight of the individual in question he was busily occupied in preparing to dine on a pad or leaf of the very spiny Opuntia cactus with which Seymour Island is thickly studded. How any living thing can actually swallow the steel-hard needle-sharp inch-long spines of these Opuntia pads and live to eat again another day is beyond my understanding. But they do.

This particular dragon was, however, preparing to eat as few as possible by busily pawing off the spines from a fallen pad with the soles of his front feet. First three strokes with the right foot, then three strokes with the left, and repeat.

Just as we caught sight of him, Cleaves came up from another direction and together the three of us watched spellbound a process which must be as vitally interesting to the cactus-eating Iguana as a Minneapolis flour mill to a bread-eating American.

It was while these details of lacertian food preparation were being demonstrated that C. B. was badly bitten on the thumb by another Iguana whose head, as she held him by the tail, was allowed by mistake to get within reach of her hand. The bite was so severe that blood dripped from it to the ground. The Lizard actually swung by his teeth from her right hand, but his tail was in her left, and most pluckily she held on and would not let him go.

The day before A. K. had watched one of these Iguanas charge a Mocking Bird which had just caught a grasshopper, make the bird drop it, and then eat it himself. So we decided to see whether grasshoppers would appeal to this one instead of cactus.

Cleaves and I each caught half a dozen of the plentiful huge locusts, and C. B. joined in the hunt in spite of her bleeding thumb. Then I held one of them in front of the Iguana on a sharpened stick. And at once the miracle began to happen.

We could almost see the idea of food ooze into the Iguana's slow reptilian mind. The head turned and came up. The whole body grew alert. Then he moved forward, at first imperceptibly, then with a rush which carried him to the grasshopper, held three feet in front of me. There was a quick snap, and that particular insect had fulfilled its destiny.

We kept this up until we ran out of grasshoppers, and the Iguana nearly out of appetite. Then Cleaves, who had been taking moving pictures of the whole affair, raised the very delicate question whether I wouldn't like to feed the Iguana with my fingers as a step toward the improvement of man's relations with the animal kingdom. I glanced at C. B.'s thumb, and seizing my largest grasshopper by the extreme end of a wing cover, with many misgivings held it out in the direction of the Iguana, which all the time was patiently waiting for the next course.

It worked like a charm. Again the head turned and came up, the slow movement turned into the swift rush, the jaws snapped, the throat swallowed, and the only injury was to the grasshopper, which was already too dead to mind it. On the second grasshopper the Iguana's nose butted hard against my fingers, but again the grasshopper took the only hurt.

"Get him into your lap," called Cleaves.

"I'll try anything once," said I, and advanced and withdrew the bait, advanced and withdrew it until the Iguana put one scaly paw on my knee. But that exhausted his confidence for the time, and he turned and retreated. At the next attempt, however, the result was perfect. He (or perhaps I ought to say she, considering the intimacy of the episode) crawled into my lap, and stayed there long enough to take the last grasshopper I had to offer. The thing was done. And not only done but photographed. Otherwise I might hesitate to tell the story.

And that is the reason for the title of this chapter.

On one occasion I had a call for assistance from C. B., who had run an attractive Lap Dragon into a pile of lava rocks but was unable to pull him out. Then I had to sit down, get hold of the tail with both hands, brace my feet against the rocks, and pull with all my strength to make any impression at all. As it was, I only got an inch or so at a time. But finally I won the tug-of-war, and C. B. carried off her prize, which snapped less than usual and seemed tired, perhaps from the strain of its resistance.

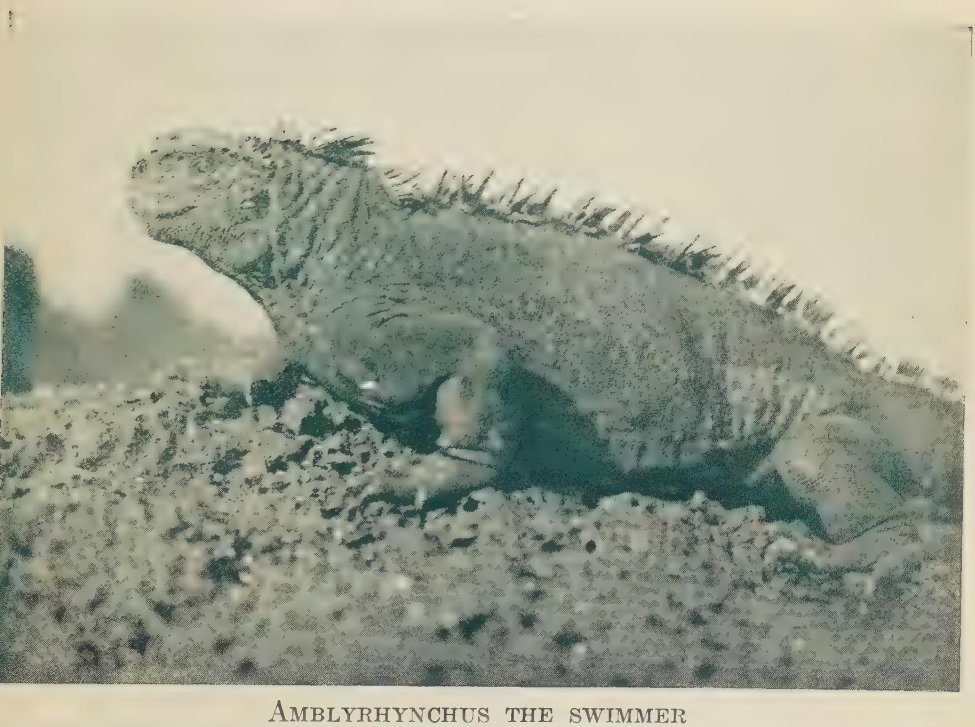
Beebe speaks of a habit of the Marine Iguana of inflating its body when it gets into a crevice and so making it impossible to pull him out. Whether the land species inflates itself, I don't know; but I felt distinctly the resistance of the scales against the rough lava. Claws alone, I imagine, could not have held for more than a second against the number of pounds I was pulling.

Turning Lap Dragons into movie actors was great fun. At our photographer's request we took Conolophus the Lizard, with three feet of him sticking out of his bag, down to where we had caught him on the edge of a dried up shallow alkaline pool, one end of which still held some water. Then Cleaves set up his instrument and told us where to turn Con loose. We took him out in the middle of the pan, headed him toward the mangroves, took off the bag, and started him. He went like a streak, with the whole crowd after him. Zumbach the cook, in his excitement, slipped on the greasy alkaline mud, still fairly wet underneath, and went down with flying arms and legs right in the path of the Iguana. No casualties on either side.

So we caught Con the Lizard and got ready to start him again. By this time he was in a furious temper, nodding his head in the threatening lizard fashion, and biting and doing his best to bite whenever he could.

After the second race The Doctor, who had him by the tail at the edge of the mangroves, let go for a moment, and instantly Con was beyond his reach among the thick roots.

WITH HIS TAIL IN MY POSSESSION, I WAS MASTER



AMBLYRHYNCHUS THE SWIMMER

Jake the Mocking Bird has the courage of his curiosity

The Black Lizard holds his own on the Galapagos

Then there appeared an ancient and very decrepit specimen clear inside the mass of roots, perhaps the mate to the one we had. At any rate, Stiff poked that one out also, and Cleaves photographed it as it emerged. Then we caught it and made a picture of its comparatively slow progress over the mud and let it go.

Another time C. B. was being photographed holding a Lap Dragon by the tail in each hand. Accidentally she swung the two together. Instantly the big one grabbed the little one by the jaw. Even twenty-five or thirty feet away I could hear the crunch of the bite, and the head of the little one began to drop gore.

It was quite a bloodcurdling situation for a few minutes, and I issued orders in the style of our best movie directors. Finally we laid a big waterproof bag in front of the large Iguana. Con the Lizard evidently regarded it as one of the burrows in which he makes his home, and crawled into it with every show of satisfaction.

One night we had Iguana stew for supper. It was tough, but of a perfectly good flavor. Considering that Zumbach had cooked it from ten o'clock in the morning until after five at night, it certainly cannot be called tender meat—but it is good. The trouble is that there is so little meat and so much bone.

That stew appeared after an Iguana had filled a hole in our collections by contributing his skin. We never killed unless there was a reason.

Doubtless there was a time when wild creatures in many places had not yet learned to fear man the killer. Outside the arctic circles what others than the Galapagos are left?

The fishing in the Galápagos is probably the best in all the Seven Seas. That of itself is a reason why the islands cannot long be protected by mere isolation, as they are today. And it is also a reason why steadily increasing numbers of people will visit them, just as the fishing in our own National Parks brings countless visitors.

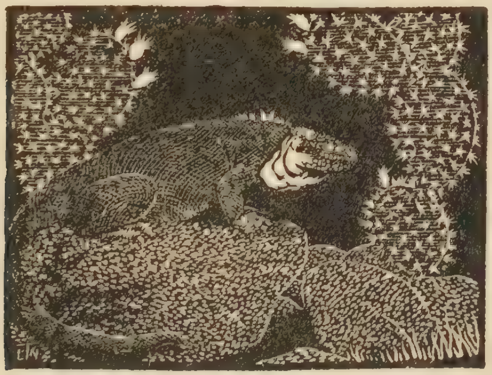
Communities of men learn slowly enough—communities of animals far more slowly. Long before these birds and beasts, unprotected by the fear of man as others are, can learn to dread him and avoid him, there will be none of the larger ones and few of the smaller ones left alive to profit by the lesson of experience.

On many of the islands the great Galapagos Tortoises, of which I have said little, have already been exterminated. Only a pitiful and vanishing remnant still survives. So with the Iguanas. So with the Penguins and Flightless Cormorants.

As the Galápagos become better known, as what may be found there and felt there brings more and more visitors to the islands, as methods of communication improve (and they surely will), as more and more boats touch at the islands, and more and more settlers come to live upon them—one thing will surely happen if we let it happen, and that right quickly—the last natural stronghold of the fearless wild will be destroyed.

Here is a region unmatched on earth in the ease and intimacy with which strange and fascinating wild animals and birds and reptiles can be seen and studied. Such a region seems worth saving.

There is just one thing to do, and that is to secure the setting aside of several of the islands as wild life refuges, just as we have done so successfully in the Yellowstone National Park and elsewhere at home. Whether the United States should approach the authorities of Ecuador, whether the League of Nations offers the proper channel through which this project may best be undertaken, I need not here discuss. But somehow it ought to be done.



X

DUNC

WHEN the Galapagos Islands were discovered, Land Tortoises were all over them in incredible numbers. And every Tortoise was not merely good to eat—it was delicious.

They were broad-bottomed, mud-colored, dingy looking, and their shells were scratched and nicked from crawling over and falling down the lava rocks. Sometimes they fell into great holes and stayed there till naturalists of later years found their bones and put them in collections, for on many of the islands the Tortoises are extinct. There was a different species on every one, and here and there a few remain, but many an island where they once crawled in hundreds of thousands has not one left.

Doctor Charles Haskins Townsend, Director of the New York Aquarium, who has been to the islands repeatedly to study them, and has studied the logs of the old whalers, quotes an estimate that since their discovery, not less than ten millions of Tortoises have been carried away from the islands.

They may not have been pretty to look at, but ships that touched at the islands took them off in incredible numbers, and especially whale ships, for long before there was a tin can or a refrigerator, the Galápagos Tortoise was the perfect food package.

The vegetating Tortoise was guaranteed to live without food or drink, and still keep fat and succulent, a month, six months, a year, or even longer. The records show that Tortoises, forgotten in a whaler's hold, were alive and kicking after eighteen months. One in the ship *Niger* lived two years.

A few of the great zoölogical parks of the world have living specimens of this sailors' beefsteak, but very few men now alive have seen them in their native state.

From the time we struck the islands our talk was of Tortoises. Could we hope to find a living specimen? On what islands did they survive, and when had the last one been taken?

We knew that an expedition of the New York Zoölogical Society had found them on Albemarle, and had brought back a breeding stock to America. We had heard about W. K. Vanderbilt's find of five, of which Townsend wrote: "It is possible Mr. Vanderbilt's party got the last of them," and we read Beck's melancholy list of a quarter of a century before, showing islands from which they had already disappeared.

To be sure there were things in the Galapagos other than turtles; for instance, snails. After our failure to climb Indefatigable, Prof insisted in his gentle way that he must climb an island—any island—

to an elevation of at least a thousand feet to ascertain what ambitious snails had climbed so high before him. After much discussion, we agreed on Duncan Island, where Tortoises had been before and might be still.

It was about this time that I verified that ambiguous adage about virtue being its own reward.

The Good Lap Dragon that sat so politely in my lap went scot-free, and is today doubtless living happy ever after, treating himself daily to a luscious diet of cactus spines. But the Bad Lap Dragon that bit C. B. committed suicide by jumping overboard from the skiff with his bag still over his head. This he did while no one was about to see. It was alleged, but not proven, that remorse was the moving cause.

Other Lap Dragons that did not jump out of the skiff are today, after many adventures by land and sea, feasting on apples, oranges, carrots, and other similar products of the vegetable kingdom, in great luxury and contentment, in the Zoos of Washington and Philadelphia.

From Seymour, the abode of the Lap Dragons, both bad and good, enroute to Duncan, another island, we stopped to look at Daphne Major, still a third. From a distance Daphne Major looks very much as if a baby giant had piled up a heap of sand and then sat down on it. Seen closer, it shows for what it is—the crater of an extinct volcano.

On the north side there was a huge arrangement of cliff and cave in which were thirteen Sea Lions—my lucky number. They were lying asleep on a sort of rocky platform behind a great tide pool, in and out of which the swells were rushing, and they lifted their heads when I barked at them from a long way off.

Then into the pool and over the seaward lip half a dozen of them came rushing out to find out what we really were. They swam close about the boat and followed us halfway around the island till we anchored opposite a possible landing place, and even after we got ashore we saw them still investigating at close range the launch in which A. K. had remained with Bud to collect a Hawaiian Petrel. The which he did.

Landing on Daphne was something of a trick, for the rock at the water's edge was like overhanging scalloped fringes of solid stone. Once ashore we found ourselves at once among nesting birds, variegated Boobies, whose young were practically grown; Doves whose eggs were in the nest; a young Tropic Bird nearly as large as the mother then came and joined it; and another Tropic Bird with a brown spotted egg.

The black-bordered white feathers of the Tropic Birds and the black streak through the eye, with their red bills and frightful screaming, gave them a complex of great ferocity. I never heard such piercing shrieks. They seemed to fill not only your ears but the whole inside of your head.

Cleaves photographed the Tropic Birds in their perfect nesting places in recesses of the lava, while I found two of their long straight tail feathers in abandoned nests. Then we all worked our way up and around the slope to the crater in the center of the island.

It was a long steep climb down into it. Prof and Stiff came down into the crater from the southern rim, climbing down a lot of little cliffs as they came. The rest of us worked our way through where the broken crater lip comes down to the sea.

First we dropped into a sort of antechamber to the crater itself, filled with grasshoppers and leading to a little rampart overlooking the bottom. One of the stones of this rampart was pierced with a circular window through which we could see the sandy floor spotted with about 500 nesting Boobies, with eggs and young in all stages of development. A Man-o'-War Bird was flying close above them looking, I imagine, for unprotected chicks.

Once down in the crater, we walked about over the clean white sand and paid our compliments to the blue-footed mother Boobies who regarded us, in spite of our considerate behavior, with unmitigated rage. It was their country, and the only place for us to go was out.

The climb back around the shoulder of the hill to the landing place was stiff and very ticklish. C. B. and I made it hand in hand so that if one slipped the other could help, for a misstep would have meant real danger of rolling over the slippery grass on to the pointed rocks below.

The delightful sail from Daphne to Conway Bay on Indefatigable we used to take account of live stock. Our list of pets consisted of only two Lizards and Galapag Butler, the little wild kid Stiff caught on Seymour. Galapag was blind in his left eye, but he handled himself so well it took us some time to find it out. He was thoroughly at home, spent much of his time between Daphne and Conway Bay chewing on C. B.'s trousers and mine (I suppose for the salt they contained), and generally made himself at home.

He ate everything—paper, cotton waste, canvas, raisins, potato peelings—what have you. He insisted on being held in someone's lap at night before he would go to sleep, and shortly after daylight every morning he was up and around the deck begging for breakfast with a cry that sounded precisely like a month-old baby. He was just as tame as a dog.

We anchored at Conway in time for a short trip into a lagoon, where two little Sharks swam about us and nibbled at our spoons close to the boat, and along the shore Cleaves found what promised to be a new species of harmless snake.

Where the surf broke on the jagged black rocks near by, C. B. and I watched the black Lizards with their jagged crests and I crawled up to a number of them. So long as I moved slowly and kept low, as if I were a seal, they were so tame that I could touch them.

One of them walked up to within a foot of me, and I could see him feed on the flat green scum of weed which covered the rocks, biting it off in very little pieces. Perhaps that explained the square flattened shape of his mouth.

A number of them blew jets of watery vapor through their nostrils when I came too close, and one of the larger Lizards repeated almost exactly the threatening nod of Conolophus.

Two or three of them I pulled out of crevices in the rocks, but if they swelled out their bodies to help them to resist I missed it.

The surf was rolling in magnificently, and one Amblyrhynchus, broadside to the sea in a little gap of the rocky shore, let the waves break and shoot over him repeatedly, and never moved.

Doctor Beebe writes that the "black lizards of the surf" never bite. We found they did. One of them at Seymour bit large splinters out of a broom handle, and more than one member of the expedition showed the marks of their jaws.

But today there were no signs of biting. A medium-sized black Lizard lay along my arm, and lost his wildness so fast that at times I did not need to hold him. Finally I took him out in the lagoon and turned him loose. He closed his legs along both sides of his body and swam entirely with his tail, moving with extreme deliberation, his head well out of the water, and no sign whatever of uneasiness.

There is a singular dignity about these Lizards which to me is most impressive. They look as if a mighty resolution might be lodged in them, and a tremendous power and knowledge of things good and evil.

The Pelican mother who plucks her own feathers to keep her offspring warm is famous in song and story, but the bird I sing is the Blue Heron father of Conway Bay, who risked, or thought he did, his life to keep his outstretched wings between the deadly sun and his two little ones. He was shaking with fright when Cleaves and I came up within reach of the long sharp bill, which he never thought of using. His plumage was magnificent, but his courage even finer.

As the next morning broke over Indefatigable we were surrounded by tremendous islands—tremendous in form if not in size. Eden towered near us, a barren cliff of solid rock. To the north were the massive and grotesque shapes of the Guy Fawkes Islands. James stretched for miles along the horizon, with Rabida rising broken and irregular in the middle distance. To the south was Nameless Island, as high as it was wide, while in the far distance towered Albemarle, cut by an isthmus flanked by huge volcanoes. Ahead lay Duncan.

This day was given to Duncan—snails for certain, and Galapagos Tortoises, perhaps. We landed there in a miniature sandy cove behind a little island, in which were four great Sea Turtles and many Sea Lions, kindly and curious as usual.

C. B. and I left the others to make their climb, and chose for ourselves the north side of the ravine which drops into the cove. We found excellent going, as going goes in these islands, and with hard labor got halfway up the mountain.

When we reached the cove again a day nursery of Sea Lion pups had come into it. They were over in the far corner among the mangroves, and they were having a perfectly gorgeous time nipping and chasing each other about, playing with sticks, and generally behaving like a litter of Land Lion kittens on the rampage.

We paddled over in a skiff to look at them. They were immensely interested and very friendly, came up within a few feet of us, and almost surrounded C. B. as she waded closer, while I made movies of her with the little camera.

When she started making movies of the pups and me, I fell off a rock into deep water, and then, throwing the tail after the hide, went for a swim with the youngsters. They played around me so close that I could almost touch them.

Bourget went and sat down beside a half-grown Sea Lion about as close as you sit next to your neighbor at dinner, and I took, as it were, the chair on the other side of him. We were so close that he turned his nose and touched my shoulder, then turned it back and touched Bourget. All of which was duly recorded on a film.

On the other side of the islet we found a mother Sea Lion with her pup. It took its dinner hungrily and noisily while five or six of us sat around close enough to touch them, and actually did it.

Just then the four explorers, consisting of Prof, who had reinstated himself to himself as a mountain climber with the 1800 feet of Dunc, The Doctor, Cleaves, and Otis, hove in sight coming down the hill. They had reached the summit and found a fresh-water pond in the crater. But that was nothing. What counted was that they had actually discovered a living Duncan Island Tortoise.

Beebe's party found one of about thirty pounds in the crater some years ago, but this one must have weighed nearer 130 pounds—his actual weight at the ship was 134 pounds. And the party of W. K. Vanderbilt, already mentioned, combed this little island for a week and found five Tortoises.

No wonder we were highly elated.

But, having found him, could we bring him down over two miles of dense brush and broken rock, through which a man without a load had trouble enough in passing? But when the Captain and the Mate said yes, that settled it.

Next morning bright and early we were back at Duncan Island and on our way to where old *Testudo ephippium* was eating cactus pads the day before. We took along six men, four poles, and rope enough to make a rough hammock to carry him in.

The question was not only whether we could carry him down, but whether we could find him. To add to our doubts, the clouds, which had overhung the mountain all the morning, began to rain on us and rain in earnest. It was cold, and we were glad to get into the partial shelter of a great pile of rocks where Cleaves found and photographed two Owls as tame as kittens.

When the rain stopped and we went on again, with Otis Barter in the lead, the brush got thicker and the going worse, and still the wonder grew whether the Tortoise would be where yesterday's party had left him. Would he, or would he? as they say in Maine.

At length, far back from the shore and about a thousand feet above it, right under the very cactus tree, which had been decorated with a bush stuck in it for a signal, there was Old Testudo himself—a real live Galapagos Tortoise among his native rocks.

Yes, by George, there he was, as serene and unruffled, to quote Tom Sawyer, as an angel half full of pie. He looked good to us. This was no racing tortoise, however. Any hare could have beaten him. Based on his change of position since yesterday, his rate of progress was one whole foot an hour.

He looked immeasurably old. He was immoderately wrinkled. He had the effect of a geologic age condensed into a single form. And still his whole aspect was so benignant that it occurred to no one to be afraid of him.

When we saw him he was eating a cactus pad, which was undoubtedly his normal occupation. This one was free of spines, for on many of the islands (including this one), old cactus trees, some of which reach thirty inches in diameter, lose all their spines and carry pads which have instead of them soft straggly yellow hairs.

When he saw us he began to move away, but first he stretched his enormous neck as high as it would go and looked around with an expression which would doubtless have been panic if he had not been far too slow for that. When alarmed he hissed and drew his head in, but soon stuck it out again.

While Cleaves and I photographed him within an inch of his life, the rest of the party went contentedly to sleep. Our Tortoise was trying to escape, but, having the reaction time of molasses in cold weather, he could only move with the most extreme deliberation, and his mind, if he had one, was far more alert than his body.

He saw motion fairly quickly, and he was distinctly sensitive to sound. Several times when Cleaves spoke loudly he drew in his head, and he was very much afraid of the noise of the movie camera.

His eyes were black and his jaws were yellow. The top of his head had the color and the feel of a water-worn flint pebble. Like the Goops, he led an untidy life, for pieces of cactus pad were stuck all over his face.

When the photographing was over and the men had waked up and finished eating lunch, we moved the old fellow, who showed absolutely no desire to bite, over to the turtle trail in which he was first found by Doctor Mathewson. Then we "discovered" him again for Cleaves' benefit, and after that put him in his hammock, and the men started down the hill.

The way they managed it was this: The turtle rested on his side in the net so as to bring the poles close together. The bearers went in front and behind with the poles on their shoulders. By the side of each bearer walked another man, or sometimes two, who carried no weight but steadied the man who did over the frightful going. Through rivers of broken lava boulders, over piles of jagged rocks higher and steeper than a staircase, through dense brush that hid the treacherous going, they worked their way slowly down.

Bourget went ahead, picked a trail, and cut brush with a heavy knife. Stiff with his machete did great execution behind him. Cleaves photographed the whole proceeding from time to time, while I did nothing more heroic than bring up the rear.

At intervals the men relieved each other. Before long, as the weight cut in, they had to pad their

It was a long steep climb down to the flat floor of the crater

Boarding the skiff from Daphne was no trick for Prof

Two strong sailors carried Dunc, and two others steadied them over the rocks

Dunc sets out for the Washington Zoo

shoulders with our hats, and they needed every one. Much of the rock over which they came was not only rough enough to make real climbing for a man without a load, but instead of being rounded, as on Indefatigable, the boulders were sharp and cutting. Only strong men handling themselves with skill and accuracy could have done it at all.

Those of the carriers who wore leather shoes tore them completely to pieces on the way down. One new pair was cut clear through the soles on that single trip. But soles of crepe rubber stood up well.

The men crawled down over the hot rocks in the hot sun. It was scorching and there was no water. They had brought only bottles of ginger ale for lunch, and Mathewson's canteen and mine were speedily exhausted.

As our slow procession neared the bottom, the ship, which had been watching us, came close, the launch steamed in, and C. B. came ashore with the water that was so badly needed.

At last the men eased the Tortoise down the broken cliff that led to the water, C. B. taking movies meantime, and loaded him into the launch, whose bow Bourget pushed right against the rocks. Then the rest of us crawled down, and the job was over.

All the way down the men were as cheerful as they could be. The only difference of opinion that developed during the difficult trip was when those who were not carrying insisted on relieving the men who were. It was a thoroughly fine performance from end to end, and glad was I when we reached the boat with nobody hurt.

We all felt rewarded when a letter arrived from Dr. Mann, Director of the Zoölogical Park in Washington, saying:

> "I appreciate the fact that it was heavy work getting the big turtle out of the brush and am writing to each member of the party who caught it."

Before we even reached the ship, Old Carapace was named Duncan, promptly shortened to Dunc. As soon as he was carried up the gangway and freed from his net, he proceeded to explore the ship. His former shyness completely disappeared, he kept his head fully out of his shell, made no objection to being scratched under the throat, and never showed the slightest sign of temper.

Somebody put Butler on Dunc's back and the little kid stood there and liked it. He also went and tried to nibble Dunc's flinty head.

Everybody wanted to sit on Dunc's back and be carried around, to which he made no slightest objection. I also became the goat long enough to sit on him and be ferried around.

This was not Dunc's first contact with the human race. After we got him aboard we discovered a little hole on each side of the top of his carapace near the forward end. In time we learned this meant he had been captured at some former time, tied to a tree or another tortoise while some of his relatives were being carried off to a ship, and somehow had escaped their fate himself. But I think he was tame, not for that reason but because he was naturally that way.

The National Zoo at Washington is Dunc's proud proprietor today—proud because with his addition more kinds of Galapagos Tortoises were collected there than in any other Zoo on this old earth, which is not a day older than Dunc looks. There you may see him whenever you please.

XI

NOBODY HOME

AT EVERY anchorage in the Galapagos, the longer we stayed the better we liked it. But another island was always ahead. Also, the time was rapidly approaching when our fresh water would be exhausted, and the *Coast Pilot* said: "Water is plentiful at all seasons on Charles Island."

So we set out for Charles, whose Spanish name, Floreana, would have been just right for a land promotion scheme, but was far from representing the facts.

As we passed the northwestern corner of the island, we could look into Post Office Bay, where the outward-bound whalers used to leave their letters for home in the famous barrel on a pole, and the homeward-bound whalers would pick them up and take them along.

So far as we knew, the island was wholly uninhabited, but the Second Mate, who had eyes like an eagle, discovered what he thought was a house at the head of the bay. Not only a house, but a two-story house. We all looked, and we all thought we saw it, but in their inmost hearts I think not many believed it. I know I didn't, for the island was well known

ALL IN PERFECT ORDER AND NOBODY HOME

THE POST OFFICE BARREL, WHERE THE WHALERS LEFT LETTERS, AT POST OFFICE BAY

WE LEFT THESE PUPS AT "MYSTERY HOUSE," BUT THEY WERE AT WRECK BAY BEFORE US

FLOREANA PEAK. THE KIND OF COUNTRY THE NORWEGIANS CAME TO FARM

FORKED-TAILED GULLS CROSSED THIS NATURAL BRIDGE to be without inhabitants. We were, however, bound to look for water at Black Beach Anchorage, and the house question would have to wait.

Once ashore we found the signs of former occupation in plenty, but it was all years old—a little lean-to near the beach; cleared land; a rusty spring-tooth harrow hidden in the grass; and a well-marked grass-grown road leading inland from the landing.

We were short not only of water but of fresh meat, and Giff had brought my Springfield because we knew there were cattle on the island. There were also donkeys, and we heard them braying all around us, but always half a mile or more away. You may not believe it, but a donkey braying in the farther distance of a desert island make a wild and very impressive sound.

C. B., Giff, and I soon left the road and began to follow well-beaten cattle and donkey trails through the dense brush. Pretty soon there was a crackling sound near by, and in a moment a beautiful young, sleek, fawn-colored bull broke cover, rushed, halted, and wheeled to look at us. He seemed huge as he stood there, with his broad forehead squarely toward us.

Giff fired. At the shot the great bull fell, but was up again in an instant and off. Giff sent a snap shot after him and missed. There was bright blood in the trail, and we could hear him smashing the brush farther and farther away. Doubtless what happened was that Giff's bullet hit the bull too high and merely "creased" him.

The thickness of the brush was incredible. Another day Giff and I set out to find a donkey we heard braying, and got ourselves into a tangled mass of lava rock and dense spiny brush. It must have taken us an hour to make a quarter of a mile, and at the end of it we had our trouble for our pains.

We had poor luck with water as well as with bulls and burros. Water there must be, as the quantities of live-stock sign and innumerable dragon flies clearly proved, but it was so far back that, as the cook said, a man would drink up all the water he could carry packing it in from where it was to the beach. That was no place to water a ship.

Post Office Bay and the alleged two-story house called us next morning. If it was a house with anyone in it we could find out about water and beef.

As we came around the corner into the Bay, a house was there, a two-story house, and no mistake, with the beacon we had thought we saw the night before, and what actually looked like a pier.

The nearer we came the more substantial seemed the house, and the pier more real. Finally we could see that the latter was built of angle iron. Just outside it was a mooring buoy made of a steel drum, and fast to that a catamaran built of four logs, big enough to hold a single man. It looked as if someone had left it at the mooring when a larger boat started away.

The place seemed strange. No one in sight, no smoke from the chimney, no life at all. Suddenly a dog barked.

I happened to be the first ashore. A broad carefully tended path, bordered with lava blocks, and covered with lava gravel, led in a gentle curve to a circle in front of the house, while other paths, similarly bordered and similarly kept, branched off in other directions. The dog, looking half starved, came to meet but not to welcome us. But that was all.

The house itself was a large two-story wooden structure set on concrete piers, friendly and homelike, painted brown, with white trimmings and white doors, and with a flight of steps leading up to a broad veranda. All in perfect order, and nobody home!

We knocked on the three doors which opened on the veranda, and when there was no answer we walked in. One room had a very elaborate ship's medicine chest in the form of a bureau, and there was a watch in a watch pocket on the wall.

Another, the living room, led through to another veranda in the rear. It contained two clocks, several chairs, a trophy of whale harpoons, two stands of shotguns and rifles, and a large talking machine. Two long book shelves fastened to the wall were filled with English and Norwegian books and magazines, and there was a great pile of Swedish newspapers in the corner, mostly dated 1927 and 1928.

In the center of the room was a table with a tablecloth, and knives, forks, and spoons; a sugar bowl well filled; a plate on which were a couple of limes beginning to dry out; a white cut-glass decanter; a bottle of pickles; an unwashed egg cup; and some plates with fragments of food still on them.

In a log book were registered the names of my friend, Charles Haskins Townsend, and of several members of the Vanderbilt party, all dated 1928. In it were notes by a man named Christensen. The last entry was on June 3rd, twenty-six days before the date of our visit.

In one room, finished like all the others with plain boards, were three bunks with mattresses, old clothes, and such.

To the west of the main living room was another small room with a bunk and a whaling cannon, and a table covered with all sorts of knickknacks, including three cardboard hearts decorated with shells. In addition to a raffle of other odds and ends, there was also a watch, apparently gold, a number of small books used as diaries, and an open bottle of ink not yet gone dry.

On the back of the veranda a box of corn, a large can of crackers, and a bag of sweet potatoes were lying about, as well as two machetes, and other odds and ends of pioneer housekeeping.

To the east was the kitchen wing. A head of cabbage lay on the kitchen table, some rice in a Gold

Medal flour bag, and various kitchen utensils. Under the table was a large crock of Ecuadorian manufacture filled with preserved meat of some sort, very nasty looking. Across a pole in one corner hung fifteen or twenty pounds of equally unpleasant jerked meat.

Someone had been cooking dinner not many days before. On the rusty stove was a pan with a liquid in it entirely covered with mildew, and a pot in which a tea of some sort of aromatic grass had been partly brewed.

Near the sink was the pail with a dipper in it, which is found in every normal kitchen that has no running water, and in another vessel an undeterminable fluid that had decomposed.

In the kitchen closet was a bottle of milky looking liquid, probably wine; a paper bag of eggs, one of which we opened and wished we hadn't; and a medley of other supplies.

Near the kitchen a pair of stairs went up to a light and airy garret, which contained a stand of pegs for Lyle gun lines, two homemade saddles covered with rawhide, a complete bridle with its bit, some small harpoons for a shoulder harpoon gun, and much besides.

Wonder of wonders, both inside and outside the house was wired for electric light, with every bulb in its place, and behind the house in another building was an electric light plant, and a radio outfit with its aërial stretched between two poles. And nobody home!

We were highly puzzled, puzzled with a capital "P." Surely whoever had left the place had not meant to leave for good. Watches, field glasses, diaries and journals, which would naturally have been taken, remained behind. The bureaus were full of clothes, soiled linen was in evidence, tools lay about, and if the place was dirty, that was nothing strange on the frontier. There were no signs of women anywhere.

At one side of the house was a hundred yards of narrow-gauge railroad running from the sheltered cove to the house, in perfect order, with a car standing on the rails, obviously intended to bring up heavy materials from the beach.

Near the cove was a blacksmith shop with three or four big tubs of salted Groupers, and in the corner a pile of salt.

A huge three-sided steel tank, evidently taken out of some ship, lay near the blacksmith shop, and to it a pipe led from the brook, now dry, which gave evidence of a heavy flow of water during the rainy season. Along the brook a young Blue Heron let us come within ten feet, and the tameness of a couple of Doves spoke well for the Somebodies who were not at home.

The house was fairly new. The Chief, himself a Dane, said it came from Norway, for the paneling of the doors was characteristically Norwegian, and the whole place felt Norwegian to him.

While we were still looking and guessing, another dog turned up, half starved like the first one, and then two puppies, tickled to death to see us, and as fat as butter. There were chickens in the brush about the house.

Most amazing of all in this far corner of the world, there was a croquet ground with hoops and stakes, the whole surrounded by a row of lava boulders. Croquet balls and mallets lay in an old moulded dory, two of which were right on the beach. Nearly half a dozen gasoline drums, set one above the other, guyed in place and painted white, made a substantial light staff; and two sets of halyards leading to the top were new.

Anchor chains, some very heavy and very old, lay on the rocks. A line of fish flakes held the drying bodies of half a dozen Groupers, and a fish net, a small-meshed seine in good condition, lay where it had been left to dry on a smooth rock.

The whole looked like a going concern.

We knew there were Norwegians in the Galapagos even though at this time we had not yet made our second visit to Indefatigable. A Norwegian from Montclair, New Jersey, had written me, before we started, to look up his brother in the islands. We knew even that a fraudulent promoter had decoyed certain of his countrymen thither, for Torp had investigated the plight of his brother Scandinavians and had been asked to contribute to the victims' relief.

But all this told us nothing about why this house had been abandoned, and by whom. Conversation on the subject flowed like the water we couldn't find, and we all went about for all the world like Sherlock Holmeses, desperately bent on finding clues. Yet being careful to distrub or remove nothing.

All that day the mystery remained unsolved.

The next day we were back, and on the way were accorded a long interview with a superb Killer Whale, who evidently lived around these parts, for he had already been reported near the ship. His dorsal fin was five or six feet long and slightly turned over at the tip. As we followed him about it cheered us to think that Killers, which eat the lips and tongues of other whales, have never acquired a liking for launches. Giff photographed him with the little movie, and he is ours for keeps.

All that day again we got no "forrarder." Was there anybody in trouble that we ought to rescue? Had the men who lived there fallen into some crevasse in the lava of the interior? It was possible, and we tried hard to find fresh tracks headed inland. Or had they simply sailed away and left the dogs to die? Or might they have been blown to sea?

One of our sailors, himself a Norwegian, assisted by the speedy shorthand of Morris Gregg, put in an hour going through the log and the diaries in the Mystery House, and gathered what information he could about the vanished owners.

Street signs but no streets at Post Office Bay

The fin of a Killer Whale

Far out to sea, like a prehistoric monster turned to stone, stands Watson Island

Big seas and sea birds pass through its portals

They appeared to consist of two young Norwegians and a Spaniard who together owned a sloop and lived by fishing and drying their catch. When the last diary entry was made (over three weeks before) they had just come in from a fishing trip. So the theory that they had met with some mishap at sea gained ground among us.

The missing three had been part of and had outstayed the colony of twenty-two men which had arrived at Floreana four years before from Norway, via the Canary Islands, Colón, and Guayaquil. About a year later most of this colony, discouraged and destitute, abandoned their live stock, buildings, tools, even their croquet set, and turned their faces toward home. Each member had put in $900, which paid the fare (one way!), gave him a share in the jointly owned property, and 100 acres of land.

Of the eighteen or so who went back, beaten by hardships and privations, twelve died in Ecuador. Christensen and his partner, Randall, whose promises of gold and diamond mines, and other misrepresentations, were responsible for the tragedy, are, it was said afterward, living safely in California. A twenty-year prison sentence is waiting for them in their own country.

From these Norwegian diaries and from subsequent information gleaned at Chatham and Indefatigable, we reconstructed the stories of four different, almost simultaneous, Norwegian colonization schemes involving 134 people, of whom only a handful of colonists and almost none of their ambitious equipment remain.

The diaries in the empty house were pathetic in the picture they gave of the effort to keep the place clean and attractive. The long accounts of trivial things gave away the secret of the men's loneliness. There were frequent references to friends back home, and there were detailed accounts of croquet games, at which it appeared one Kris excelled.

Where were the writers of the diaries? *Quien sabe?* We asked ourselves many questions as we left the mystery unsolved and prepared to set sail for Chatham Island in our search for water, which had become imperative.

Again, what should we do with the dogs? In the end, seeing they had already survived three weeks of solitude, and that their masters might yet return and miss them, we left them to their manifest duty of guarding Mystery House.

When, after various adventures, told elsewhere, we ran into Wreck Bay, there on the deck of a shabby old schooner, the first boat we had seen since leaving Panama, were the very two puppies we had just left. The mystery must be soluble (or is it solvable?). Whichever is right it was.

Captain Bruun of said schooner, the *Manuel J. Cobos*, promptly explained that he had touched, as was his custom, at Floreana the very day we left. Knowing the colonists and their habits, having been himself the Captain of one of the colonizing ships, he had no doubt they had been blown away, so he cruised about for them among the islands and finally came upon them at another diminutive settlement at Academy Bay on Indefatigable, where they had taken refuge and were waiting and hoping for a chance to get home.

Captain Bruun decided that two men should stay with their boat until he could arrange to return and tow them back to the house at Floreana. The third, who was ill, was with the Captain then on his way to Guayaquil for treatment.

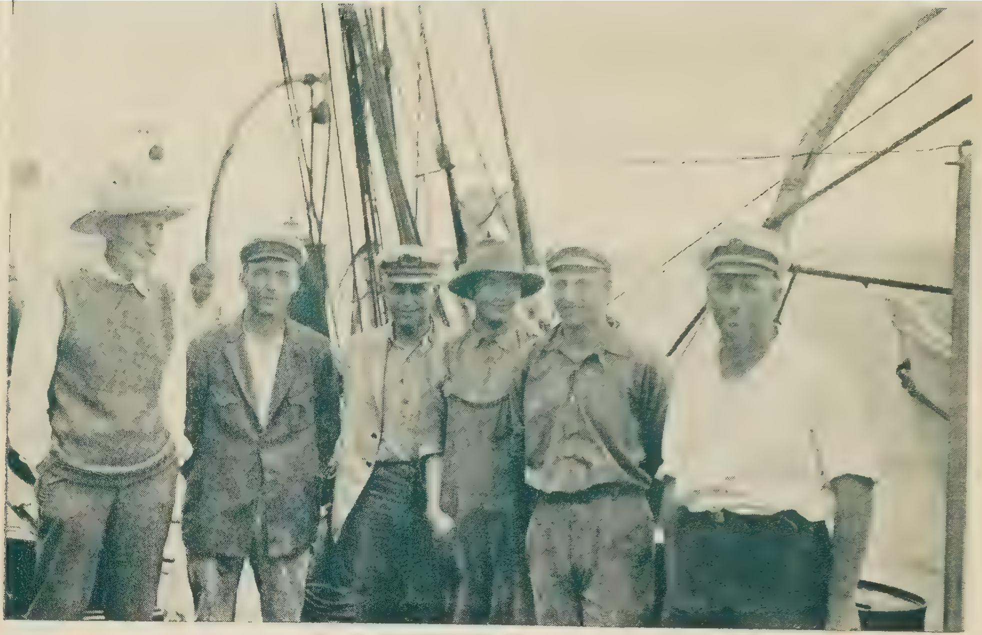
The sick man was Kris, the croquet champion, and to him we made our explanation for our invasion of his empty house. From Captain Bruun we learned more details of the colonization swindle and it was he who introduced to us the two families of his compatriots still left on Chatham Island.

Fifty men, fourteen women, and five children had arrived from Norway at this island four years before. After the first year, they were all gone except the Guldberg family—father, two spirited and able daughters, Karin and Snefrid, and a son; a young couple, very discouraged looking; and one other man. It was about the Guldberg family I had heard from my correspondent in New Jersey.

At their earnest request C. B. and I rode out to visit this plucky little family. The house, similar to the empty one at Floreana, the girls had succeeded in making alive and human like themselves. They gave us coffee and waffles and honey and showed us their treasures—quartz which they still hoped might be diamonds, pyrites which they hoped might be gold, and a full-fledged telephone instrument on the wall, unconnected and useless of course, but a symbol, according to C. B., of the suppressed longing for civilization which they gallantly refused to acknowledge.

We "did" the town of Progreso with its sugar factory, and the coffee plantations which lay round about. We replenished our commissary with fish and 400 pounds of prime beef at five cents a pound, and, since Captain Bruun was worrying about fetching the Norwegians stranded on Indefatigable, he himself being overdue in Guayaquil with a load of cattle, we came over to Academy Bay, picked up the two blown-aways and took them back to the home of a mystery now no more. And that is how we came to learn that Indefatigable is not inaccessible, if you know both sides of the mountain.

THE *MARY PINCHOT* MADE THREE TRIPS FROM THE MAINLAND TO WRECK BAY. THE *MANUEL J. COBOS* (AT WHARF) HAS BEEN DOING IT FOR FIFTY YEARS



THE SECOND, FOURTH, AND FIFTH MEN FROM THE LEFT WERE THE NORWEGIANS MISSING FROM "MYSTERY HOUSE"

CHATHAM ISLAND EXPORTS FINE CATTLE ON THE *COBOS*

XII

THE ALBATROSS

FOR years I have hungered for an Albatross, not to eat it, but to hang it, with its great wings outstretched, across the ceiling of the hall at Milford, and let the breeze from the open door balance it gently as the ocean winds did when it was alive.

The anchorage at Hood Island, where the Albatrosses keep house, is an uncomfortable one. Magicienne Rock lies hidden almost in the middle of the harbor, with fourteen feet of water on it, while we drew sixteen. But we kept away from it successfully, and as soon as the anchor was down we started to find the Albatross rookery described by Beebe in *The Arcturus Adventure.* One of his illustrations helped us to find it, just as another in *Galápagos: World's End* helped us to locate the meager anchorage in Darwin Bay.

The Albatross rookery is three or four miles south and east of Gardner Bay. The rough sea slowed down the launch, but at last the topography of the picture came into sight, and soon we began to make out here and there on shore a number of the great white-headed birds.

Finding Dunc was a thrill and this was going to be another, for the Albatross has had a curious hold on my imagination all my life. The immediate question was getting ashore. There was a good surf running and the strip of sandy beach, complicated with lava boulders, did not make it easier. And we had started for the rookery with only an hour to spend there, for it was already late afternoon.

Once ashore, the birds were glorious things to see. Their stateliness and beauty was most impressive. They were enormous, ten or twelve feet from wing to wing, and with white and cream-colored heads and necks, shading delicately into the mottled feathers of their shoulders and breasts, and rich brown wings. Moreover, their overhanging eyebrows and the black fleshy eyelids gave them a curious expression of kindness, serenity, and wisdom.

Some were sitting on nests which were to be distinguished from the rest of the ground only because a few of the larger pebbles had been cleared away. Others were standing about in twos and threes and fours fleeting the time pleasantly, as they did in the Golden World.

The mothers or fathers on the nest were absolutely fearless. The others, less occupied with immediate duties, showed only slight signs of nervousness. After Cleaves had done what photographing was possible in the time we had, Giff, Stiff, and Bud chased one idle bird up to me, and I caught him by putting my hat over his head. He retaliated by biting me so vigorously on the arm that I carried the scar for months.

The first bird on the nest that I approached snapped her beak at me with a loud and formidable sound, but she seemed to be making rather merely a *pro forma* protest. Another, which I took by the bill and led aside as gently as possible, was brooding an egg, one end of which was already open, and the chick inside was chirping loudly in apparent protest against interference with his Ma. The moment I released the latter she waddled straight back to the nest and sat down again over her egg.

This same bird was moved from her egg four separate times in the process of taking pictures, and each time she moved back again as fast as her legs would take her, paying absolutely no attention to the people who were standing around.

When a brooding Albatross goes back to her egg or her chick she does it with a concentrated tenderness that is beautiful to see. She comes forward till she is sitting on her heels with the chick between her feet, and then lifts and lowers herself over it, meanwhile dropping her head and talking to it with a crooning sound that if made by a human mother would have a world of affection in it. After seeing that motherly routine, not a member of our party would have killed an Albatross on a bet. They were too much like self-respecting, affectionate, kindly people.

But if they seemed like home folks one way, the Albatrosses were certainly unlike them in another. Their power of flight surpasses that of any other bird, and it is supposed they come to land only for the breeding season, which would mean that for nine months each year, unless they light upon the water at odd times, they are on the wing and keep the sea.

Albatrosses are famous for their courting dance. We saw them going through it. Two birds facing each other a foot apart bobbed their heads to the ground, first on one side and then on the other. First one bird and then the other went through this several times, making a series of noises, half whine and half moan. They then lifted their necks high both together and opened their beaks wide. Having held them so for a moment, they proceeded to fence with their closed bills, striking them together with a loud rattling sound, one two, one two, for four or five consecutive blows. And that would be all until the bowing and gaping and the fencing began again a little later. One pair went through the whole dance three times while we watched.

The Galapagos Albatrosses were more married and more occupied with social amenities than any other birds that ever swam or flew into my ken.

Much talk has been made about the awkwardness of these birds in walking. For the first few steps the Albatross does roll from side to side like a sailor on the stage. After that, it walks steadily and competently, although not fast. Considering how little it uses its legs, and how weak they consequently are, it does extremely well. But the bird stands as little as it can. It seems to sit down whenever it has the chance.

The bird I caught behaved with dignity and courage. When I tucked it under my left arm, holding its feet with one hand and its neck with the other, it fought vigorously to bite me and escape. But when it was through it was through. It never showed any of the panting and fluttering panic that less majestic birds so often show.

I carried it around on shore for perhaps twenty minutes. In the Seabright again I put it on the floor. It raised its huge wings a time or two but made no real effort to escape, showed no inclination whatever to peck (which may be explained by the rounded end of its beautiful yellow bill with turbinated nostrils), and when the string which Prof had tied around its bill fell off it did no more than bite me on the ankle, but not severely. Then it sat down peacefully to await events. Arrived at the ship I let it bite my straw hat until I could catch its bill, tucked it under my arm again, and walked quietly up the gangway to where C. B. was waiting for us.

The bird created a real sensation. Everybody came aft to look at it standing calmly and quietly on the deck. Its feathers were scarcely ruffled by the rough handling, but it sat down promptly on its heels and began to preen its plumage.

To the Captain, Albatrosses were nothing new. He told of catching the Wandering Albatross, a different species, with a triangle of tin covered with salt pork, in which its curved beak catches and so permits it to be hauled aboard. The same bird would take the same bait day after day.

I never heard of anyone who tried to eat an Albatross. They feed on squid, which themselves are excellent when fried, but to eat an Albatross you must first kill it, and none of us had the heart to do that.

Turning this one loose was less successful than perhaps it should have been. I took it to the rail and threw it gently upward, expecting it would spread its vast wings and float away. Instead it dropped straight into the sea with a great splash, falling so heavily that the water welled up over its back. Then it paddled off to leeward, turned into the wind to make an effort to rise, evidently thought better of it, and continued its slow and dignified journey.

Something else claimed my attention for a few moments, and when I looked up the bird had disappeared.

Next day C. B. came with us to the rookery. I think the big fellow I brought aboard the night before was there again that morning, for one bird, and one only, showed a marked distaste for our society.

In addition to the Albatrosses there were Blue-footed Boobies in this rookery, Variegated Boobies, Olive-footed Boobies, Black-headed Gulls, and Tropic Birds. The birds were nesting not only on the flat top of the island but also (especially the Gulls and Tropic Birds) in holes and little platforms in the cliffs which are stained white and overhang the breakers of the long Pacific roll.

Three Tropic Birds were sailing about and making believe to light on their nests. A dozen times they flew up to the face of the cliff, fluttered as if to settle down, and then flew off again.

A. K. had been greatly disappointed at not getting Tropic Birds at Daphne Major for the collection. So I scrambled along the cliff until I found an old bird with a young chick hidden so deep in a crevice that I probably would never have seen it at all except that it "deafened me with its diabolical screaming."

I felt like a murderer seven times over as I put my handkerchief over the brooding bird, seized her and her chick, and sent them to where the good birds go.

Then I started back, vowing that I would never do anything like that again. At least I have the consolation of knowing that our visit to the island did not reduce the Albatross population by a single bird.

The whole place was resonant with the cries of birds and busy with their activities. The great Variegated Boobies which show little but white when sitting on the rocks, were most in evidence, while the Albatrosses with their kindly countenances and overhanging eyebrows sat remote and absorbed in their brooding, or clattered their bills in their dance. Their fishing, I think, was done in the early morning because they seemed to have little to do and much time on their hands.

The fiercest bird in this rookery was a Blue-footed Booby which, with its angry light-colored eyes and feathers erect on its head, looked far more warlike than any eagle. This Booby was as fearless as it was savage, for we could come as close as we dared and it never ran away.

As we sat and ate our lunch that day the land birds came around us. One Mocking Bird lit on C. B.'s boot and pecked at the eyelet holes. Doves came within two or three feet, while just beyond a dozen Finches explored the ground for insects.

On a stone at our feet a Dove outstretched a wing in the sunlight. Its rich brown color, the blue circles about the eyes, and the golden sheen of the neck made it demurely beautiful.

Close in front of us was a prickly bush in the top of which a little lizard sat eating leaves, while one of the larger kind hopped on Giff's foot and climbed to his knee, and at the same time a still larger one watched him not more than a foot away.

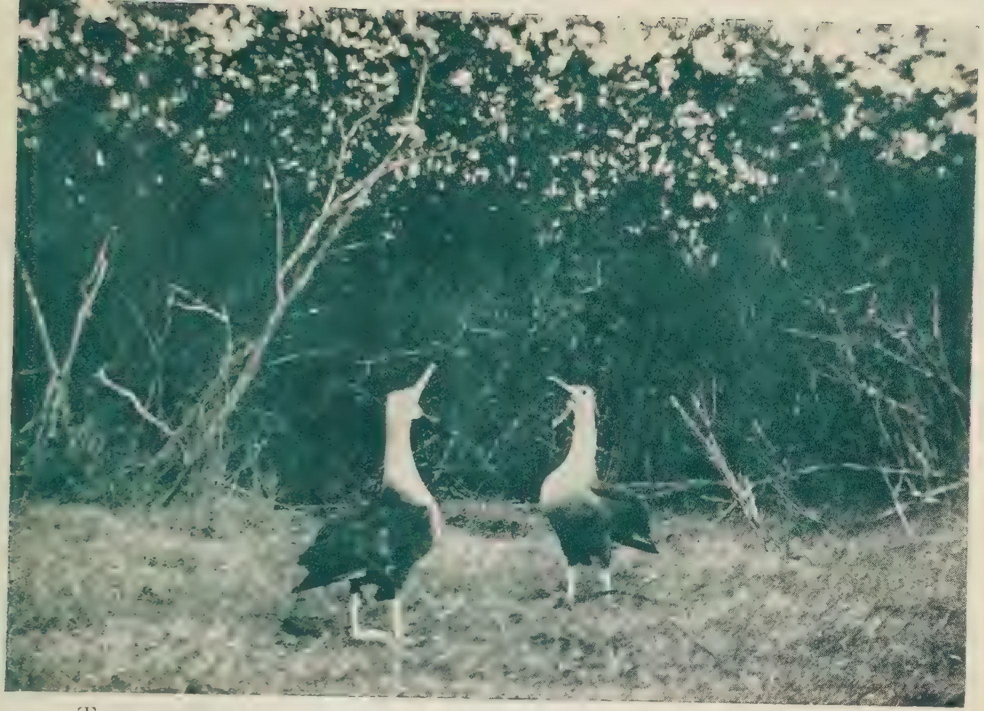
Two weeks later we came back to Hood again, where the same desire for an Albatross at Milford assailed me, and the same inability to hurt one stood

THE ALBATROSS ROOKERY OF HOOD ISLAND CAME INTO SIGHT

SHE MAY HAVE LAID THE EGG OR HE MAY NOT

THE ALBATROSS. KINDNESS, SERENITY, AND WISDOM

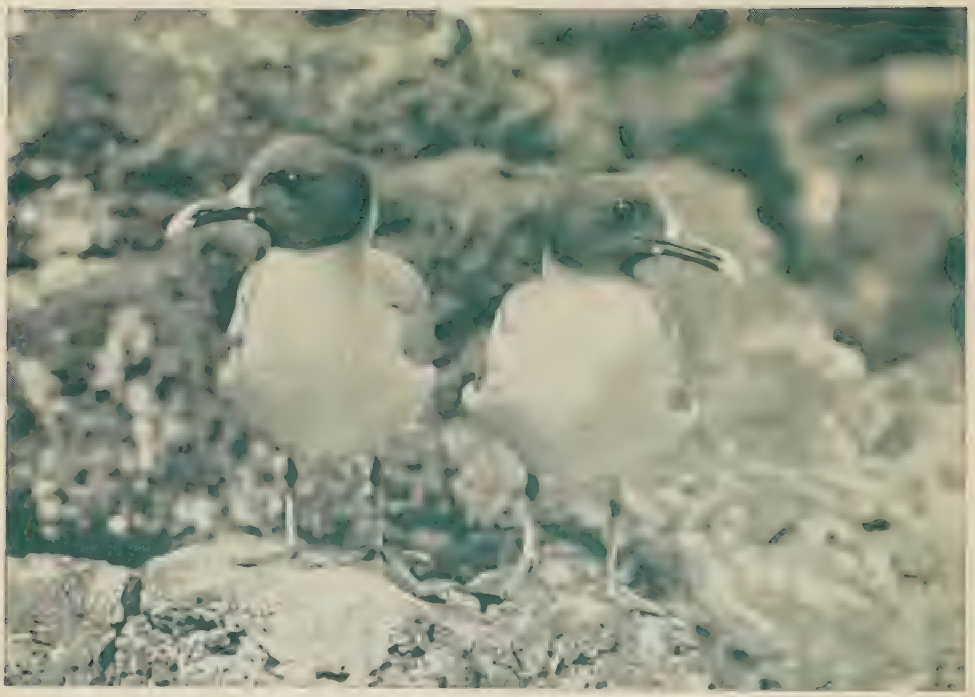
THE ALBATROSS THAT NEVER GOT TO MILFORD



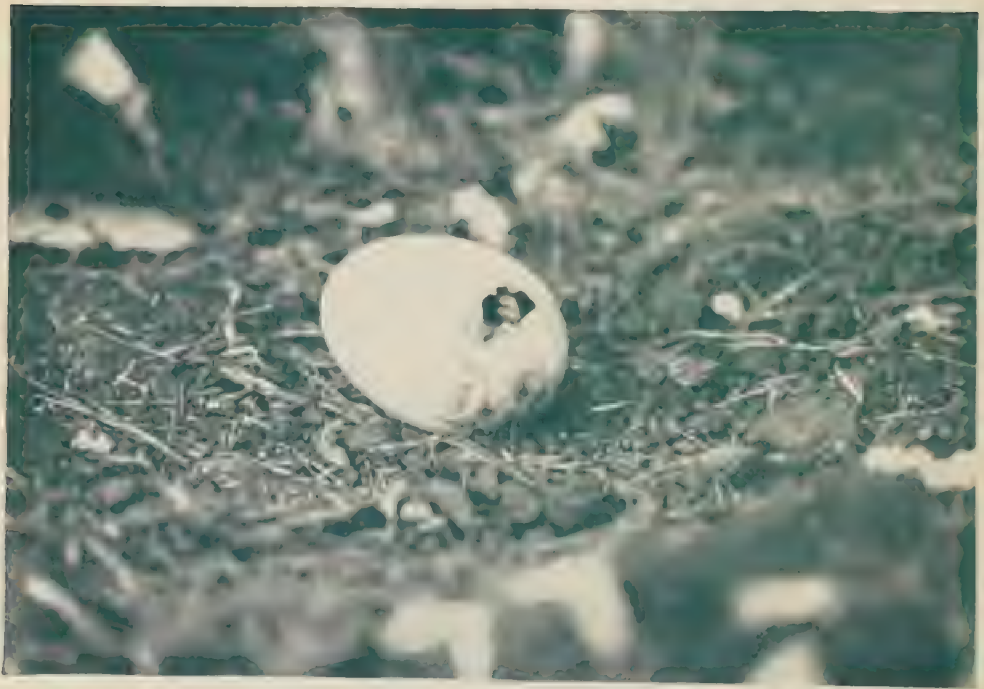
THE COURTING DANCE OF THE ALBATROSS IS STRICTLY FORMAL

C. B.'S ADVANCES ARE COLDLY RECEIVED

HE WANTS HIS BEAUTIFUL WHITE-THROATED MOTHER TO CROON HIM TO SLEEP



THE FORKED-TAILED GULLS POSED MOST POLITELY



AN ALBATROSS DÉBUTANTE ABOUT TO COME OUT in the way. We compromised by catching a magnificent male and holding him, while A. K. and Torp extracted a number of parasites and safely bottled them. Even these supernal birds are not without their fleas to bite them.

Galapagos Hawks were common on Hood Island. The Doctor presented a Lizard on a stick to an immature bird, and the latter seized it with one talon, hung to a branch with the other, and beat his wings to keep his balance, while Cleaves took movies of the scene. Then The Doctor offered the Hawk more Lizards, and finally had a tug-of-war with him, holding one end of one of them while the Hawk tugged at the other. Meantime the man stroked the bird on the back.

A. K. tried feeding the big black-throated Lizards and the smaller red-throated ones with chewed raisins. They were as eager for this transpacific food as the Mocking Birds themselves. At one time A. K. had two Mocking Birds and five Lizards waiting before him to be fed. One Mocking Bird did its best to climb up the slanting barrel of his gun, and finally flapped its way to the top and perched across the muzzle.

In and out among the crowd of Mocking Birds, picking at raisins, bread crumbs, and pieces of orange, ran two or three youngsters, each pursuing its mother and demanding food with open beak. The mothers were busy, lost their good tempers, and repeatedly drove their offspring out of the way with screams and pecks, obviously giving them orders to rustle their own grub.

And then there was a Mocking Bird fight. Two birds, males I suppose, undertook to destroy each other. It was the most savage kind of battle. They chased each other about, screaming. They fought by jumping into the air like game chickens. When one downed the other the under bird struck upward with his claws like a wounded Hawk. They grappled on the ground interminably, neither of them able to move, but each with one foot clasping the eyes and bill of the other. It was a perfect stalemate while it lasted.

They grabbed each other by the feet, beat each other with their wings, and dug into each other with their long sharp beaks. It was a hummer of a fight and it must have lasted nearly ten minutes.

The conclusion was Wilsonian—peace without victory. The birds flew apart and one at least was so completely exhausted that it could barely hold itself upright on a limb.

When it came time to leave, the first skiffload went aboard the launch, while C. B. and I lay down on the beach to wait. At once the Mocking Birds gathered about. One of them picked at C. B.'s book and I threw a raisin at it. He picked it up, bit on it once or twice, and then started to soften it by rubbing it against the dry white sand, throwing up a little jet of it on either side of him. That did not satisfy him, so he ran off six or eight feet, struck the raisin against the sand so rapidly and fiercely that he seemed to make a miniature sand geyser, apparently softened it to his liking, swallowed it, lifted his head, gazed around with conscious virtue and high self-satisfaction, and flew away, leaving the impression of a bird which had met a new situation with spirit and resource, and durn well knew it.

Upon which we all went back to the ship in great serenity and contentment. But the hall at Milford is still without its Albatross.

XIII

TOUCH AND GO

"WELL begun is half done" may be true in Connecticut, the land of steady habits, but it is far from always true at Galápagos, World's End. The day we left Wreck Bay for Barrington Island all nature smiled. We had a wonderful sail across, with everything set including the jib topsail, and we made the twenty-five miles in less than three hours with only a moderate breeze. It was a fine start.

Reports of bright yellow Iguanas on Barrington Island had come in from some of the Norwegians at Wreck Bay, and we were off to find them. On the east side of the island there is a rocky little islet that makes one side of a delightful little cove. Here we landed. In the cove were lots of Sea Turtles, on the rocky shore the timbers of an ancient wreck, and on the beach at the head of the cove not less than fifty Sea Lions of all sizes, including several very large males with their foreheads as highly domed as china Chinese pundits.

Sea Lions in the Galapagos may not be afraid of men, but a noisy launch is another matter. They took to the water with a rush as we came slowly in, many of them jumping clear like Porpoises, and turned the whole surface into foam.

We stepped out on the sand and scattered like quicksilver, according to our usual custom. C. B. and I struck off across the island in search of Iguanas, with an eye to the off-chance of running across one of the Barrington Tortoises, long reported to be extinct. The Iguanas we found in plenty, sandy yellowish in color, and on the whole larger than any we had seen. Prof afterwards reported a brilliant saffron one which he could not catch, but all of ours were rather dusty. They all had fierce red eyes.

The first one C. B. and I saw was easily run down. The next required the usual tug-of-war before he could be extracted from his refuge in the rocks. The third hid in one of the shallow burrows Con the Lizard digs when he can find soil enough for the purpose. There was a regular village of these holes, at least a dozen, in this one spot.

A stick poked into the burrow provoked a vigorous slap from the Iguana's tail. I peered in cautiously, saw that I could reach it, saw also that the animal was bent in a semicircle with his jaw in the first biting position, and concluded that when I did reach that tail I would have to pull quick.

The coup came off successfully, and this particular Con, one of the largest and certainly the fightingest we caught, had his head also put in a bag. I tied the first two, carefully bridled with fish line, to trees, and stuck the big one, bag and all, down in his burrow again.

The walking was good on Barrington, remarkably good for the Galapagos, which was probably the reason that the Tortoises were all gone. At least we saw no sign.

An hour later at the lizard hitching trees we found that one had slipped his bridle and escaped. But with another taken on the way back we still had three. Then C. B. caught sight of the biggest of the day, and him we tied up also.

Soon it was time to get back, so with one Iguana in C. B.'s hand, one in my hand, and two in my pack-sack, we followed a goat trail back to the beach. Giff, Bourget, and Stiff had caught five Turtles in the cove, but the fishing was poor because of the Sharks.

A solitary wooden cross just back of the Sea Lion beach stood where some wanderer was buried. But although the date remained—March 23, 1920—the name was gone. Ships near the land do not bury men at sea.

The *Mary* was anchored in fifteen fathoms just off the mouth of the cove, and was to leave early the next morning for Wreck Bay again, where we had engagements with Señor Alvarado and several Chatham Island Norwegians. The Captain elected to start soon after midnight, and upon that all but the anchor watch turned in.

Early next morning the noise of the winch raising the anchor woke me sharply. Soon after I heard the engine start suddenly at high speed, and almost at once the ship touched bottom. Just touched, but it was unmistakable, and the shock sent me on deck in a hurry.

It was pitch dark, but in a moment I could make out the shore of the main island, the islet that makes the cove, and the point of the islet where the bow had touched the rocks. We were almost in the mouth of the little bay. The Captain was at the wheel, with both mates and the crew on deck. Giff had heard us strike and was beside me, but C. B. was still asleep.

The engine was now running full speed astern to pull us off the point, but it was run astern too long.

In a few seconds—very few—we struck again stern first. The ship smashed into the steep shore of the main island with a grinding crash. Although the engine had been reversed and was going full speed ahead at the moment, we hit so hard I thought the ship was there to stay. But the shore was steep and she slid off at once.

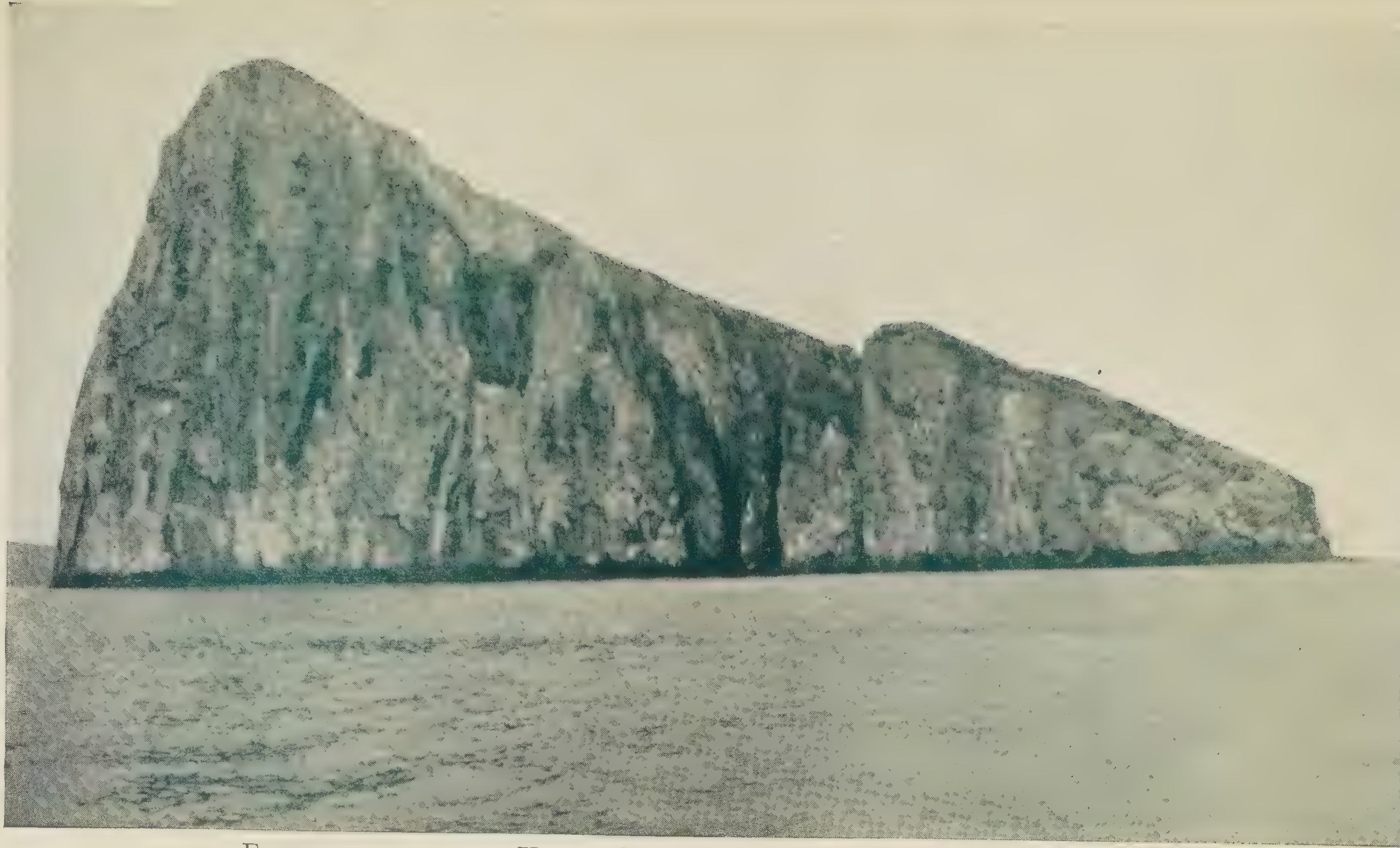
By this time the *Mary* was well inside the mouth of the cove, which was not more than three times as wide as the length of her. There was no space to swing if she anchored, and she must get out.

When the schooner banged into the main island I sent Giff, who had been standing perfectly quiet and steady alongside, to tell C. B. to get her clothes on quickly and come on deck, where the rest were already. She came up promptly, altogether serene and rather pleased than otherwise with the prospect of a wreck—an unforeseen addition to the delights of the trip.

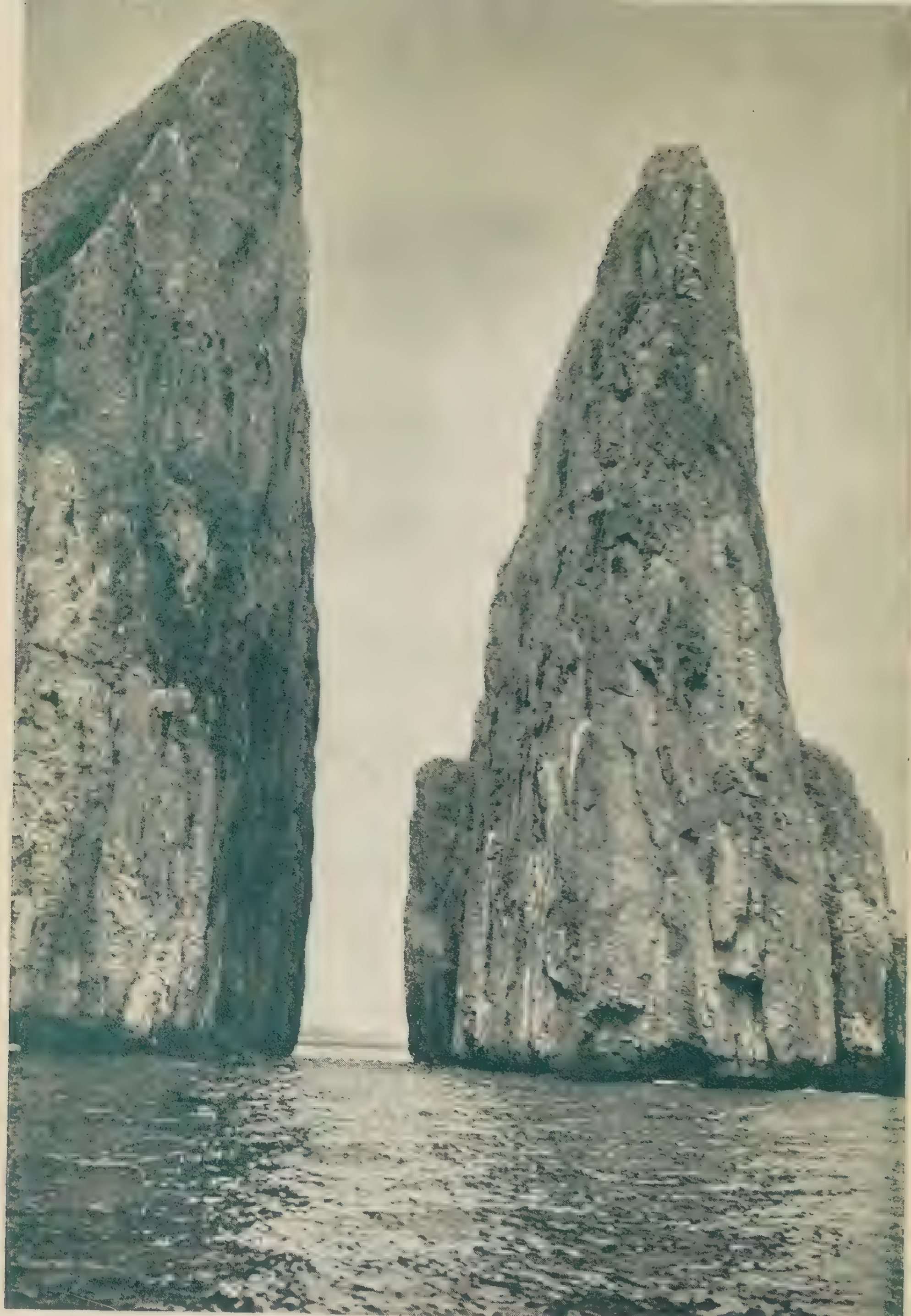
To me the prospect was less joyful. A constant succession of dismal pictures ran through my mind. I saw the twenty-seven souls of the *Mary Pinchot* ashore on the uninhabited waterless island of Barrington, with no place to stay but right there. I saw the ship sunk, the boats sunk with her, the wireless out of commission, the *Manuel J. Cobos* not due at Wreck Bay for twenty days, and even then far out of signaling distance. I saw us ashore in the clothes we stood in, our stores of food gone down with the ship, no water to drink but cactus juice, and nothing to eat but iguanas and goats.

While these pleasant thoughts were chasing each other around inside my head, the Captain was doing his best to get out of the cove. But it speedily developed that something was wrong with our steering gear. Every time we started ahead the ship swung sharp to port, and the *Mary Pinchot* was famous for turning in her own length. There was only one explanation—the rudder must be jammed hard aport.

We went ahead and went astern, dropped the anchor and hauled it up, did it again and again. Finally the launch was put over and with her help we got the ship headed out. The Captain thought she would clear the reef on the islet's end. But the



From one direction Kicker Rock looked somewhat like an old shoe



THE GIANT PORTAL OF KICKER ROCK WAS BIG ENOUGH TO LET THE *MARY* PASS jammed rudder, the current, and the wind combined against us, and threw us fairly on top of the jagged lava reef. The swell dropped us on it hard—four times.

Each time she struck there was a heavy crunch. It was a miserable moment. I thought her bottom plates were surely broken through, and as she pounded I heard the Captain saying to himself, "That's the end."

But it was not the end. After the fourth crash she slid on over the reef into deep water. We were outside the islet and afloat. But would we stay afloat? And if we did, with our jammed rudder could we keep offshore? The island was to port. If we went ahead the ship would turn sharp toward the island. If we went astern, the jammed rudder would throw her back against the islet.

So the launch tried to pull her head around. That failing, it pulled her stern about, increasing our distance from the bad black rocks. The lead kept going, and when the depth was thirteen fathoms and we were far enough offshore to swing, we dropped the anchor.

Long before that the engineer was busy with the pumps, and even before we were sure of keeping off the rocks he reported the bilges absolutely dry. In spite of the crunching the *Mary* did not leak a drop. The fact was that her broad and solid keel, with its forty tons of lead poured in, had taken these tremendous blows utterly unharmed. When we got her into dry dock at Balboa we could find little more than scratches on her paint. The *Mary Pinchot* is a solid ship.

There had been no panic or undue excitement. The crew had been steady and effective, the engine room force instantly responsive and on the job, the afterguard silent, cool, and keeping out of the way. Bourget was positively cheerful. As a ship's company we had nothing to be ashamed of.

We were well out of a bad hole, but not yet out of trouble. For we could not stay where we were.

Meantime we sat down to wait for morning. The watch below turned in. A. K. went back to sleep. C. B. and Prof, with The Doctor and Taylor, forcibly awakened at last—the only man in the ship that slept right through the whole disturbance—made up a peaceful bridge game in the cabin, while I, profoundly thankful to escape goat meat and cactus juice, did what the others had been doing all the time—went quietly about my business, which just then happened to be a mental reconstruction of what happened when we nearly lost the ship.

Just about the whole ship's company was doing the same thing. The officers' mess hummed with eye witnesses narrating, explaining, defending, while the appetite that always follows excitement among healthy men led to the total disappearance of a whole fresh baking of Pete's bread, which had to be replaced next day. Pinochle and hot coffee helped to while the time away.

Actually, how did it happen?

At one o'clock in the morning of Friday, August 2 (it wasn't the thirteenth), all hands were called to get under way for Wreck Bay. There was no moon, and the breeze was very moderate. The foresail, mainsail, and spanker were set, and the two jibs. The anchor was raised, the jibs were hauled to windward, and the ship started to fill away on the starboard tack.

At that moment a puff of wind came around Barrington Island from the southeast and swung the vessel's head to starboard. She kept on swinging, moved by both wind and current, until she went slightly aground bow first on the rocks at the southerly end of the little islet.

The night before the Captain had notified the Chief that the engine would not be wanted. But when he saw she was likely to touch the reef and rang for full speed astern, the Chief responded within twenty seconds, and the engine was going full speed astern when her bow just touched the rocks, so lightly that no harm was done. Then the smash followed.

It was obvious that if we had used the engine to back offshore when the anchor was raised there would have been no accident. But that was water over the dam. The ship was tight; but the rudder was smashed. What could we do now?

At daylight we went to work on the steering gear. The wheel box was taken to pieces, the wheel taken off, and two four-inch joists, made fast to the steering crossheads, were hooked with tackles to the after rigging to give us purchase for steering. We believed that the rudder had been bent in a quarter circle and that the starboard rudder stop was what prevented it from being thrown far enough to starboard to steer her straight.

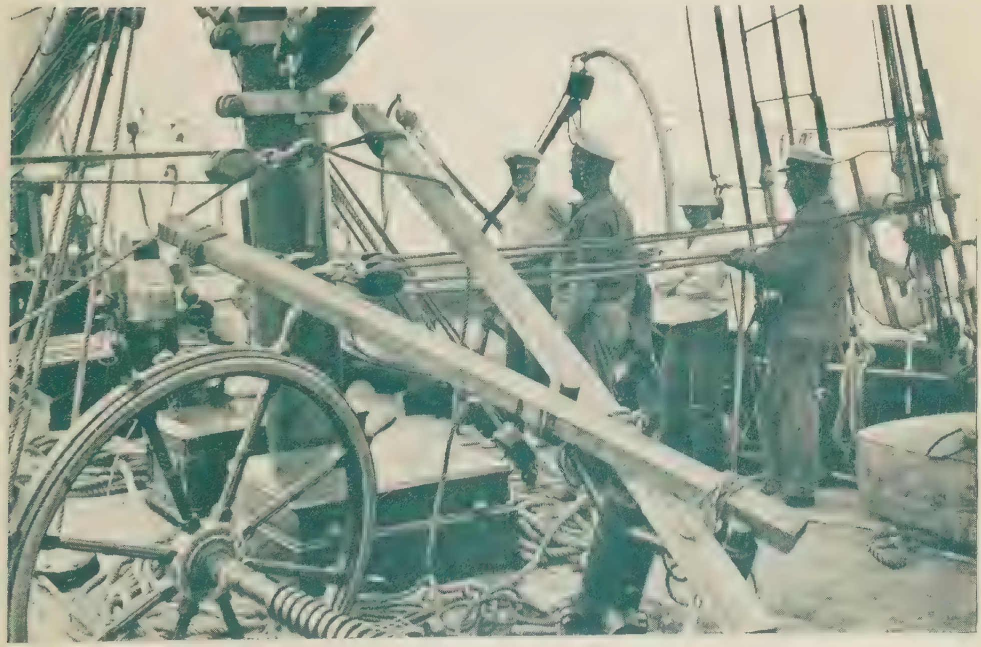
Wreck Bay was the only point in the whole archipelago that had even intermittent contact with the world of men. The wind was fortunately fair. With sails set and engine going, steering with sails, the jury gear, and the launch which we towed astern, we made excellent time, and anchored successfully in the harbor to the great satisfaction of all hands and the cook.

The launch was bailed out and we went ashore, found our friends waiting for us, brought them back on board, and loaded the fruit we had already ordered. While C. B. entertained her guests, the Captain, the Chief, and I examined the rudder with the water glass.

Instead of being bent the rudder was perfectly straight, but the rudder stock was twisted a quarter turn and jammed in the stuffing box. The four rivets in the stuffing box plate had been sheared by the shock, but when the Chief replaced them and caulked the joint the leak around it ceased entirely.

We were 920 miles from Balboa. To make that trip even in these peaceful seas under our own power involved a certain risk. Wirelessing and waiting for a tug spelled much delay. So we decided to take the chance.

The shore that smashed the *Mary's* rudder



The jury steering gear which brought us safely a thousand miles to Balboa

THE HOLE THROUGH KICKER ROCK

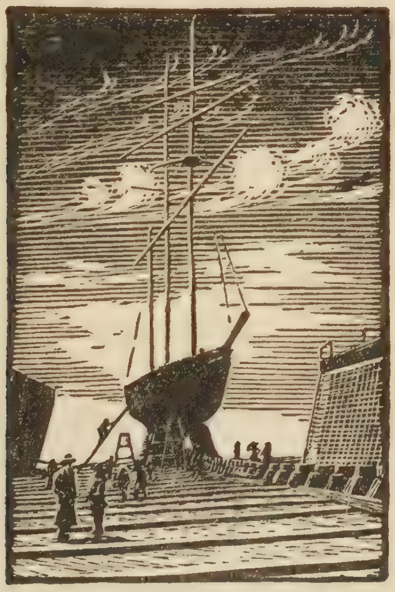
THE *MARY PINCHOT* ANCHORED AT BARRINGTON ISLAND, AND THE ISLET THAT NEARLY WRECKED HER

Steering with the jury gear was a complicated piece of business. Every now and then the ship got off her course and we had to stop the engine to bring her back on it. But on the whole we did extremely well, for we made Balboa in a little over four days.

After this second docking C. B. announced her unalterable determination to write a book under the title "Yachting in Tropical Dry Docks."

As we left for the Galapagos the third time our tanks were full of water, our decks were crowded with fifty-seven barrels of gasoline and oil, and we had stores enough to take us halfway around the world.

This time it was Tahiti or Bust—and we were through with busting.



XIV

IN PURSUIT OF SCIENCE

WHEN the Balboa–Wreck Bay Ferry arrived on its third trip we paused a while to take on fruit, and used the day it took to come down from Progreso to visit Kicker Rock—a name wholly unworthy of its subject.

More than seven hundred feet high, and not much more than twice as long, the main rock is flanked by a passage and a huge pinnacle, a passage so narrow that the squared yards of our ship could not have been passed through, but so deep that there was plenty of water for her keel.

Stiff took a Golden Grouper in this passage, and C. B., Giff, and I hooked many Tunas near by, some of which landed in the launch and some in the interior of Sharks.

A lofty but narrow tunnel runs through the main body of the rock, just wide enough to take the skiff, as we found on trial—a dark, mysterious, and most exciting place, and full of gaudily colored fish.

The air was full of Boobies and Men-o'-War. On the north side of the rock, where a dry waterfall dropped into the sea, we landed with some difficulty.

Giff went first and helped me up, and we kept on till we were stopped by a second fall. Then we went back for the others, who brought a rope ashore, and I acted as anchor behind a shoulder of rock while they climbed the first fall.

In the Men-o'-War nests, built up on bushes with a single stem like little trees, were eggs and nearly mature birds, and all the steps between. All the youngsters were very hostile and noisy. They opened their beaks and squalled till you could see down their throats to their vocal cords, and they bit ineffectually at anything they could reach, such as ends of sticks or inquiring finger tips.

One of the young ones presented us with three flying fish, all without heads or tails. The acceptability of the gift was somewhat marred by the fact that they had been in warm storage since the bird swallowed them some time before.

C. B., Prof, and I climbed up a narrow gully filled with nests to a deep notch in the side of the cliff, kept free of vegetation by perching birds. As our heads rose clear, suddenly the great view of Chatham Island burst upon us. Then our eyes followed the gorgeous vertical cliff, white in the fierce rays of the vertical sun, to the water four or five hundred feet below — so far below we could not hear the surf we saw breaking at the foot of the great wall.

Below us flew clouds of Man-o'-War Birds, disturbed but not frightened by our invasion. We looked far down upon their curved black wings, and noted the brown marks on their shoulders.

We could not get our own consent to break away from this wonderful place, and we were hours late getting back. The ship was leaving the harbor to look for us as we returned and reported. The fruit was on board, and we were off for Albemarle and the wide Pacific.

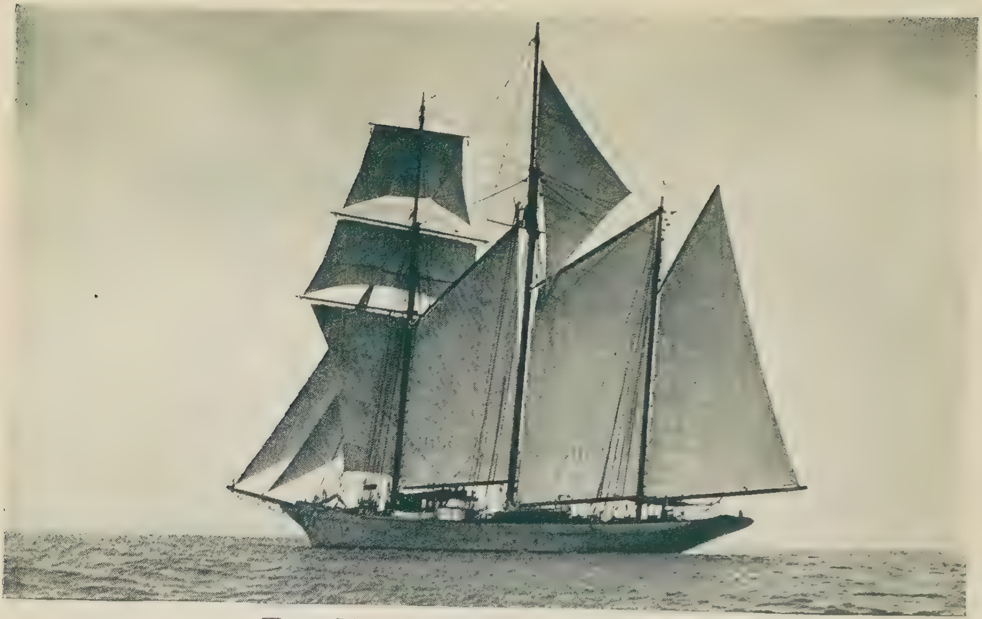
A heavy swell was running next morning when we picked up the houses along the shore at the little settlement of Villamiel on Albemarle Island, our first stop on the largest island of the group. Villamiel is the port from which the magnificent cattle of Albemarle are shipped to market. Doctor Townsend had told me it was a hard place to get into, and that his launch had upset in the surf and nearly downed a man. So Bourget, Bud, Otis, and I went in to look it over.

We were still far from land when Bourget caught sight of a rowboat making out from shore. Carlos Aguirre Gil, a young Ecuadorian of winning address, was in her. It was now the end of August, and he and his uncle had been expecting us ever since May, having seen a picture of C. B., Giff, and me in the Guayaquil paper. Three months late. But time is a commodity that they have a good deal of in Southern Seas.

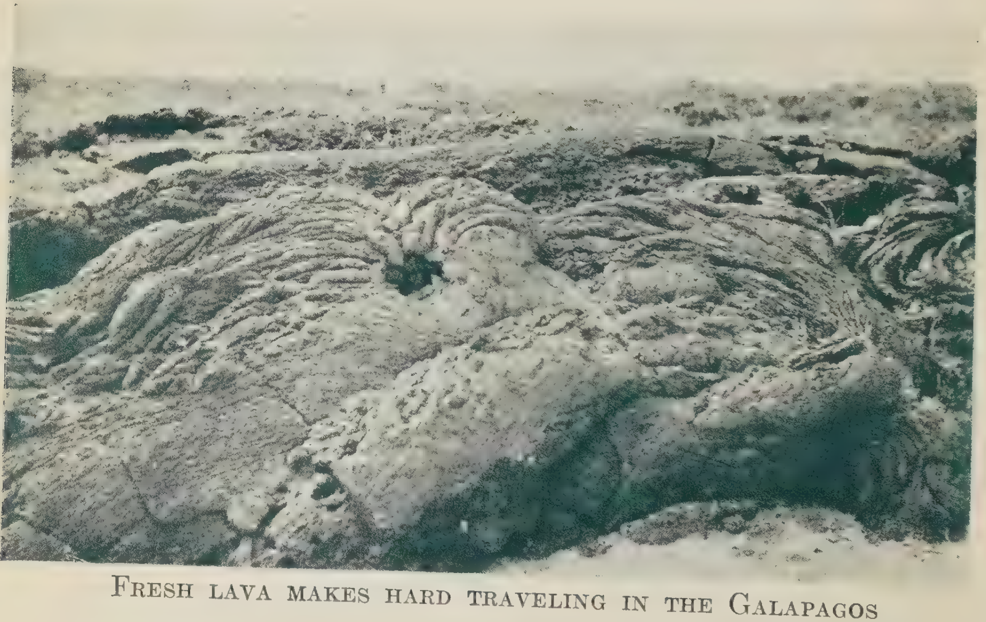
Gil's boat was built of straight pieces of plank with neither flare, dead rise, nor curve in her anywhere. It took courage to go to sea in a boat like that.

The return of the wash from Progreso. Prof: "And I started with four like this!"

Carlos Gil shined one up with shoe polish before giving it to C. B.



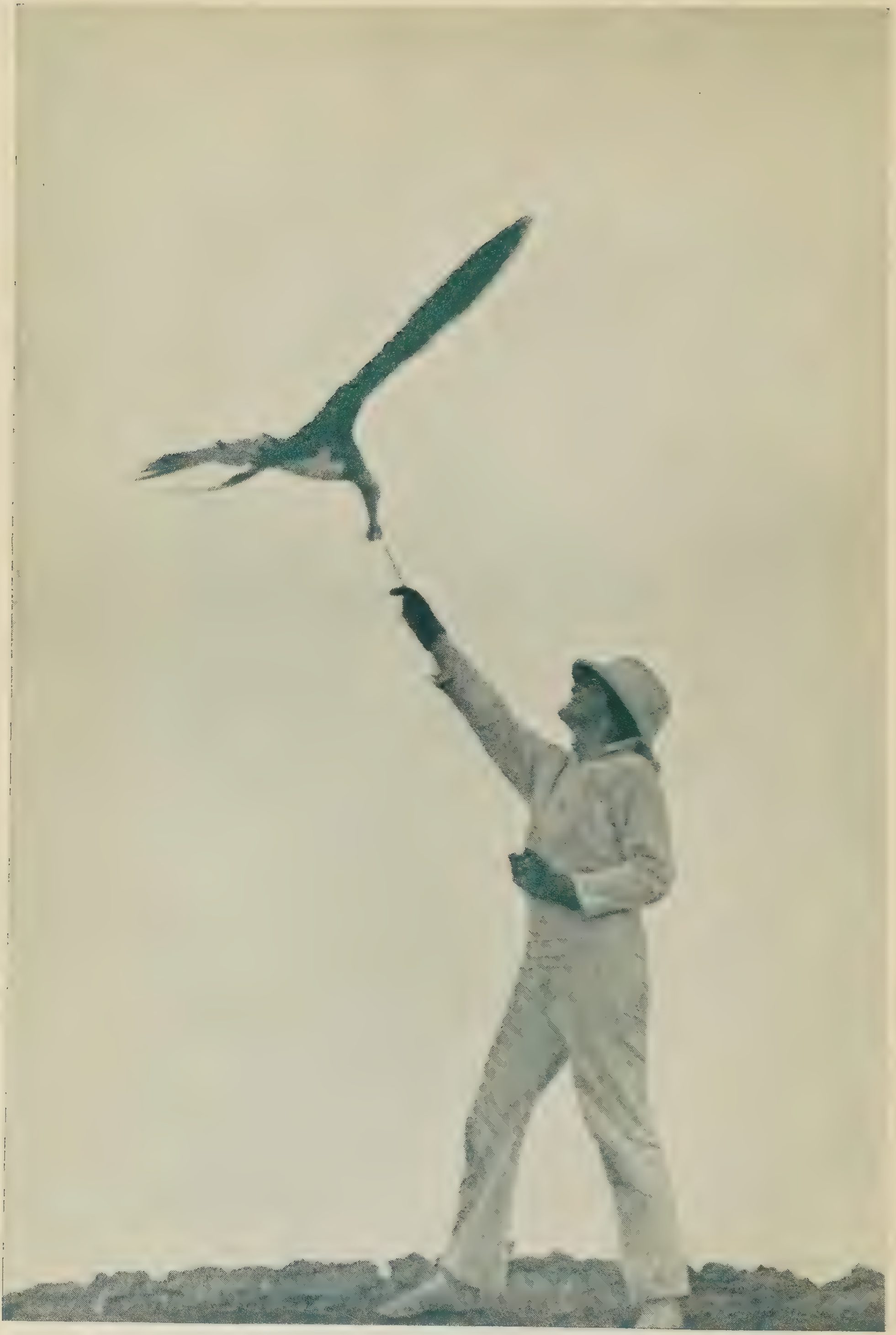
The *Mary Pinchot* was able



Fresh lava makes hard traveling in the Galapagos

AT HOME, BUT NOT RECEIVING

THE FIRST FAMILIES OF DAPHNE WERE ANYTHING BUT CORDIAL TO STRANGERS



C. B. HANDS OUT A HAND-OUT

The reefs in Villamiel Bay are very numerous, but they are also very visible and very easily avoided. And there is plenty of shelter for small boats behind a little island even when the trade wind is blowing squarely on shore.

The fierce black reefs and the heavy surf pounding on them made a dreary setting for the dozen houses of the little settlement, each propped on stilts and all widely scattered over a bleak flat of dark lava and white sand.

Carlos Gil the elder welcomed us warmly at the water's edge and took us to his house, where he invited us to breakfast.

The dining room, only half walled off from the gallery, had around the walls the remains of a beautiful old French wall paper with little figures of trees and girls in a light brown tone. The breakfast was in the Ecuadorian manner. It consisted first of a dish of fried plantains and fried ham. Next followed a chicken soup in which a drumstick or a wing or some other part of the chicken was floating. The proper thing is to eat the chicken first with your knife and fork, and then the soup with your spoon.

After that came an American touch—canned asparagus with canned dressing. Then another dish of chicken with excellent rice, and finally canned quinces. There was no bread or butter. Bananas, baked hard, well supplied their place. And coconut milk took the place of water. This colorless liquid, which doesn't look in the least like milk, fills the interior of immature coconuts and ultimately dries up as the nut ripens. In the meantime it is always cool and pleasant, no matter how hot the sun in which the nut has hung.

Both the Gils urged us to bring the *Mary* into the harbor. They told us that the Ecuadorian gunboat *Cotopaxi* and the *Manuel J. Cobos* had come in and gone out successfully, but I remembered the cove at Barrington and the *Mary Pinchot* stayed offshore.

It was at this time, thanks to the kindness of Señor Gil, that Rosie and Shoe Shine came aboard, of whose adventures more hereafter.

Prof was more than eager to climb the great volcano back of Villamiel, and some of us went with him to a height of over four thousand feet, during which excursion we were thoroughly soaked and nearly frozen, for if the weather can be cold in the Galapagos at sea level, it can be almost arctic on a high mountain in the wind.

The snails, however, were present in such numbers and variety that Prof was reconciled entirely to all the sufferings endured by all the rest of us. His own were not to be forgotten, for the second night out he came in so soaked and chilled that only C. B.'s prompt grandmotherly measures saved him from real trouble. She made him take off his wet things, dried them for him, warmed him up with hot coffee, and scolded him with such effect that he lived to climb for snails another day.

The special reason for such climbing was that land snails can neither run, fly, nor swim, so that the occurrence of a particular kind of snail at a particular place may tell much more about the distribution of living things than you might suppose. In particular, we hoped that the Galapagan snails we collected might embrace species and varieties which, when Prof had studied them, might cast new light on the origin of life on these islands.

Inland from Villamiel runs the road from Santo Tomas down which the cattle come. We called it as we went along el Camino de los Huesos—the road of the bones. For mile after mile we were never out of sight of the bones of cattle—cattle that had died, had been hurt and then killed, or had been butchered for meat on the way from the rich upland pastures to the barren coast.

Here and there in the uplands we saw great black or tawny bulls, far away enough and displeased with us enough to make us glad we were on horses. Nowhere have I seen finer cattle or finer upland range.

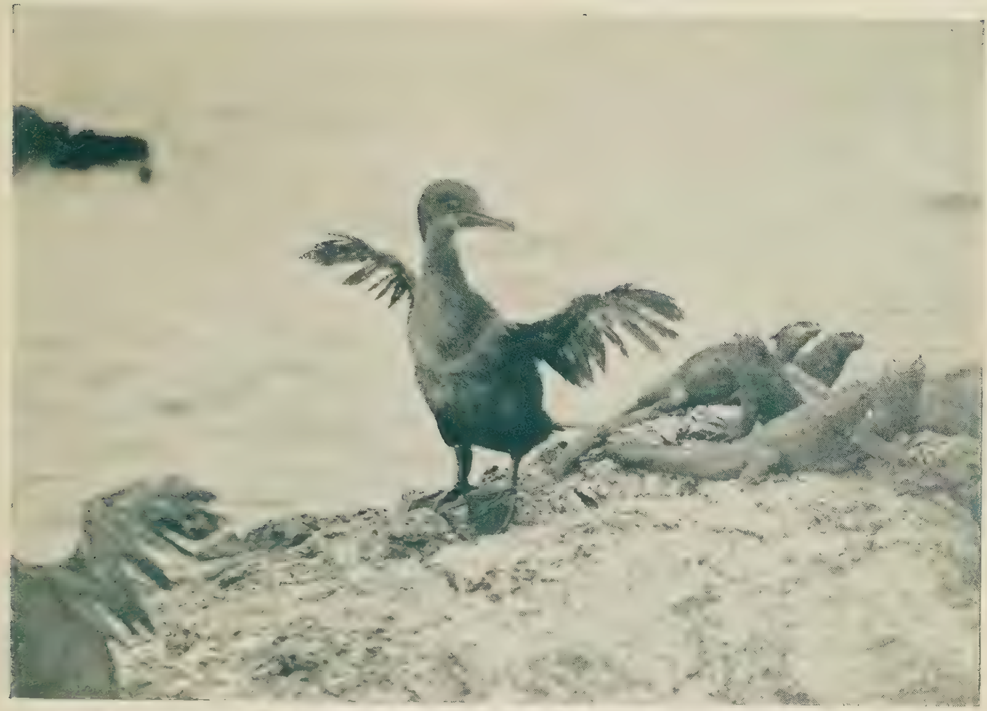
In the high interior we found proof that this island had once in part been forested, and then deforested by fire. But how forest fires could ever have started or could ever have burned in a country as wet as we found this one, was beyond my understanding. There must be a real dry season at some time of the year.

During the course of this excursion C. B. so fascinated the natives that she was presented with a little live pig, which later on met with the enthusiastic gustatory approval of the whole party.

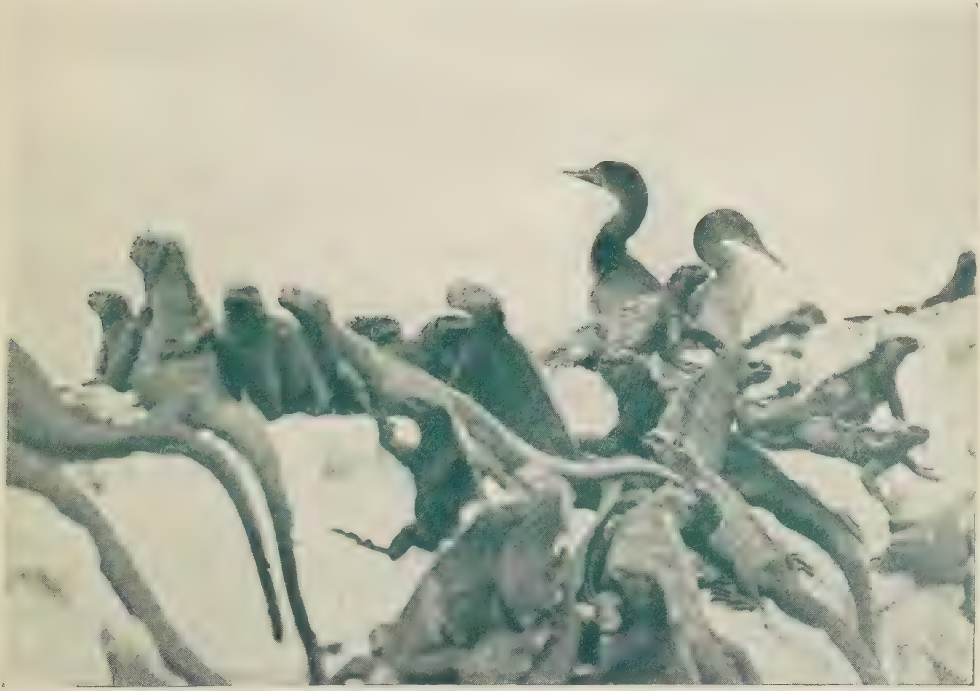
It was good to see the *Mary Pinchot* out at sea when we reached the beach again. She is a sea-going ship. Her beauty and grace were breath-taking as we saw her from the approaching launch, breasting and dipping to the trade-wind swells, with all her lowers drawing, and a white bone in her teeth.

Our next harbor was Tagus Cove, where, and where alone, the Penguins and Flightless Cormorants might be found—the northernmost point of Penguin distribution on the large round globe. It is a small, almost completely landlocked harbor with nearly vertical sides of naked water-worn tufa at the base, steep grass slopes higher up, and here and there, near the skyline, brown cliffs which look like stratified sandstone, but of course are not.

Concerning this place Doctor Beebe says: "With the help of a scaling ladder, we managed to land on a flat rock at the mouth of the ravine." Our fortune was otherwise. Far from requiring scaling ladders, our party set foot ashore at the landing place without the slightest trouble. The Chief, who has flat feet, walked easily up the slope, as I did, while the secretary of the expedition traveled the same route with his one leg and crutches and never turned a hair.



THE FLIGHTLESS CORMORANT CAN FLY NO MORE THAN HIS FRIENDS, THE LIZARDS



CORMORANTS AND MARINE LIZARDS LIVED TOGETHER LIKE PEAS IN A POD

A. K. limited himself to two Galapagos Penguins

The awkward age in Flamingoes

Flightless Cormorants. They didn't use their wings and so they lost them

Many another voyager must have done the same, for we found the names of at least a dozen ships scratched into the soft rock, and "Arpha R.Y.S. 1926" in huge painted letters, and, it seemed to me, in execrable taste.

The hair-raising periculosity of our adventures at this place never burst upon our minds till we read what happened to Dr. Beebe. Then we realized and trembled.

In a chapter of *Galâpagos: World's End*, appropriately entitled "Rainbow Chasing," he thus describes the promenade at Tagus Cove:

> "Then began a ghastly climb, up and down, up and down, over slopes just under the sliding point of loose clinkers. The surface was composed of my old friends, flat slabs of lava, like manhole covers, balanced and resting on a thick layer of volcanic dust. We never dared climb in line, for time after time, a careless step would upend one of these rocks and it would go careening down hill like a runaway cart wheel, starting subavalanches at every touch. With a forty-pound moving picture camera in one hand, a three-barrel shotgun in the other, and a gamebag which was diabolically clever in getting in the wrong places, my feelings were far from science when my foothold gave way. At such a moment I would sink flat and spread eagle as much as possible, chewing and eating dust which had taken part in the birth of Albemarle. Slowly I would move down hill, with a movement as sickening as that of a circular earthquake. Rock after rock would hurtle to the bottom and splash into the black, sharkful water. More than once when I

> seemed actually to be gathering momentum, my eye caught sight of the *Noma* riding so peacefully at anchor, and I would have given much to be on board of her. Within a few seconds time I mused, apparently for hours, on the insanity which impelled me to tempt fate thus—when a fraction of a degree's greater pull of gravity would precipitate myself, camera, gun, clinkers, and dust into the depths of Tagus. Then my foot would catch in the precarious roots of some small plant, which in my present plight seemed as a mighty oak.
>
> "I even welcomed the painful assistance of a cactus—anything rather than that feeling of utter helplessness, when the whole earth seemed sliding downward with you. The moment I achieved some kind of a grip, my mind went ahead to the boobies and, possibly, cormorants awaiting me and I would slowly and painfully arise, and from a serpent's progression, attain that of a quadruped, and on hands and knees creep to the nearest point, for another attack upon the slope above."

The foregoing will perhaps remind the reader of a description of walking on Indefatigable. But worse was yet to come.

> "Dodging the thick growth of thorn brush, we encountered a veritable chevaux-de-frise of cobwebs. Here were the same zigzag-backed spiders as elsewhere, but of the largest size and with webs as thick and strong as elastic cord. With arms full of apparatus, and every pore dripping, lame and sore from our frightful climb, it was no added pleasure to have hundreds of sticky weblines across eyes and ears and face, with the spiders themselves crawling everywhere from cap to knees. I sometimes stopped, seized a single great strand, lifted it and snapped it back of my head without even nearly breaking it."

The sufferings of the Early Christians were nothing to that.

Tagus Cove is on the west side of Albemarle, and just over against the stark desolation of Narborough. It is only three miles across the strait between, but it would take paper enough to pave a road that long adequately to describe Narborough and the volcano that made it. An impassable jumble of lava rock reaches from the slopes of the mountain to the coast, most of it so new that as yet no plants that we could see had gained a footing. Along the shores a few small patches of mangroves dip their feet at the water's edge, and in one place Cleaves and I found some scattered plants of a little cactus. Later we saw places to the north where the grass had won a foothold. Elsewhere bare rock and nothing else.

The moment we came near enough the coast of Narborough to see them, black Amblyrhynchus Lizards appeared in unbelievable numbers. There were groups of twenty-five or fifty so close together you could hardly have touched the rock between them, and nearly all were over three feet long. Their crests and sides blended so perfectly with the blackest lava that they seemed to grow out of it as we looked. The more we searched the more we saw. A rock that had but one at the first glance would show ten or a dozen or twenty or thirty to a more careful eye. There must have been hundreds of thousands on Narborough.

The tide was low, and all along the coast the black Lizards were swimming, but all within about a hundred feet of shore. One I saw crawling along the bottom in fifteen or twenty feet of water. They were tamer and easier to catch than on any of the other islands we had landed on.

We had followed the coast but a few moments when the first Flightless Cormorants came in sight, five of them perched on a whitened rock, with Amblyrhynchus and Scarlet Crabs in numbers all about them. To see these birds holding out to the bright sun their starved and shrunken little wings was a lesson in the great cosmic truth that to keep a power you must keep on using it. These birds had forsaken flight, and the capacity to fly had in its turn forsaken them. Cleaves photographed the birds while A. K. impatiently champed his bit, and after the pictures were made collected the four he wanted from the group.

Next day we found Flightless Cormorants on a narrow shelf of rock just above tide in Tagus Cove. Some were sitting on nests made of seaweed and raised only two or three inches above the surface of the rock. The sitting birds were highly indignant, extremely hostile, and altogether unwilling to move. One I pushed aside to get an egg for the National Museum. She protested violently all the while, and returned to the emptied nest as soon as I would let her. Other nesting birds snapped at me and refused to move at all. Meantime others stood about with their ridiculous little wings spread out and paid no more attention to us than if we had been in China.

On the shore of Narborough were small red-throated Lizards in numbers, and Seals, and then the second of the rare local birds appeared—a Galapagos Penguin. In remarkable contrast to the Cormorants, which showed no manner of fear, the Penguin was rather shy. It hopped from rock to rock into the water before we came within fifty yards. Considering the country it had to travel, its hopping was a highly skilful performance, and its last hop took it safely feet first into the briny. We chased this one in the skiff, and afterward another, but both left the boat steadily behind.

Near where we landed the lava was fresh as paint, its edges and surfaces as sharp and unweathered as if it were newly cooled. Loose plates of lava were turned up in all directions, crevasses many feet deep opened at short intervals, the footing was more than insecure, and wherever your skin touched the lava it was cut.

Not only sheets of lava, but sharp and grotesque pinnacles, rose commonly from the tops of the ridges. An ant climbing through a nail brush would have about the same sort of going a man would have in this formidable country.

On the beach where we first landed was a sick Seal, very thin and very unwilling to move. Some of us touched him gently. Then we walked off and left him. He had something the matter with his teeth, which seemed largely to have disappeared.

On our return to Tagus Cove from the shores of Narborough there were four Penguins at the entrance to the cove, out of which A. K. took one. Then we found another group from which he took the other one he wanted. In all we saw ten Penguins and perhaps fifty Cormorants, of which two Penguins and six Cormorants were collected. They are among the rare birds of the world.

Sea Turtles were in sight at Tagus Cove at almost every minute. Seals played about and followed us according to their usual custom, but there were few sea birds compared to other places.

Nevertheless, during the day A. K. saw and identified the following list of birds: Galapagos Penguin, Elliot Storm Petrel, Hawaiian Shearwater, Ridgeway Shearwater, Dusky Gull, Noddy Tern, Blue-footed Booby, Red-footed Booby, Man-o'-War Hawk, Pelican, Flightless Cormorant, Yellow-crowned Night Heron, Dusky Heron, Great Blue Heron, Red Phalarope, Oyster Catcher, Wandering Tattler, Turnstone, Yellow Warbler, Mocking Bird, Hudsonian Curlew, and two species of Ground Finches.

I understand the Red Phalarope has never before been reported from this region. These birds breed all around the globe north of the Antarctic Circle. Their winter home is "unknown but probably on the oceans, at least as far south as Falkland and Juan Fernandez islands." They have been reported as far south as Patagonia. Not much bigger than the English Sparrow, they fly in flocks above the sea and seem to shun the land.

At evening Cleaves and I climbed the hill behind the landing, met Prof and The Doctor coming down, looked down upon the wonderful little crater lake behind the ridge, and back at the vessel saw the great mass of Narborough grow incandescent in the setting sun, as if some blacksmith had heated it to the cherry red at which they temper steel. Then Narborough returned to its natural somber black and the quiet night was on us.

XV

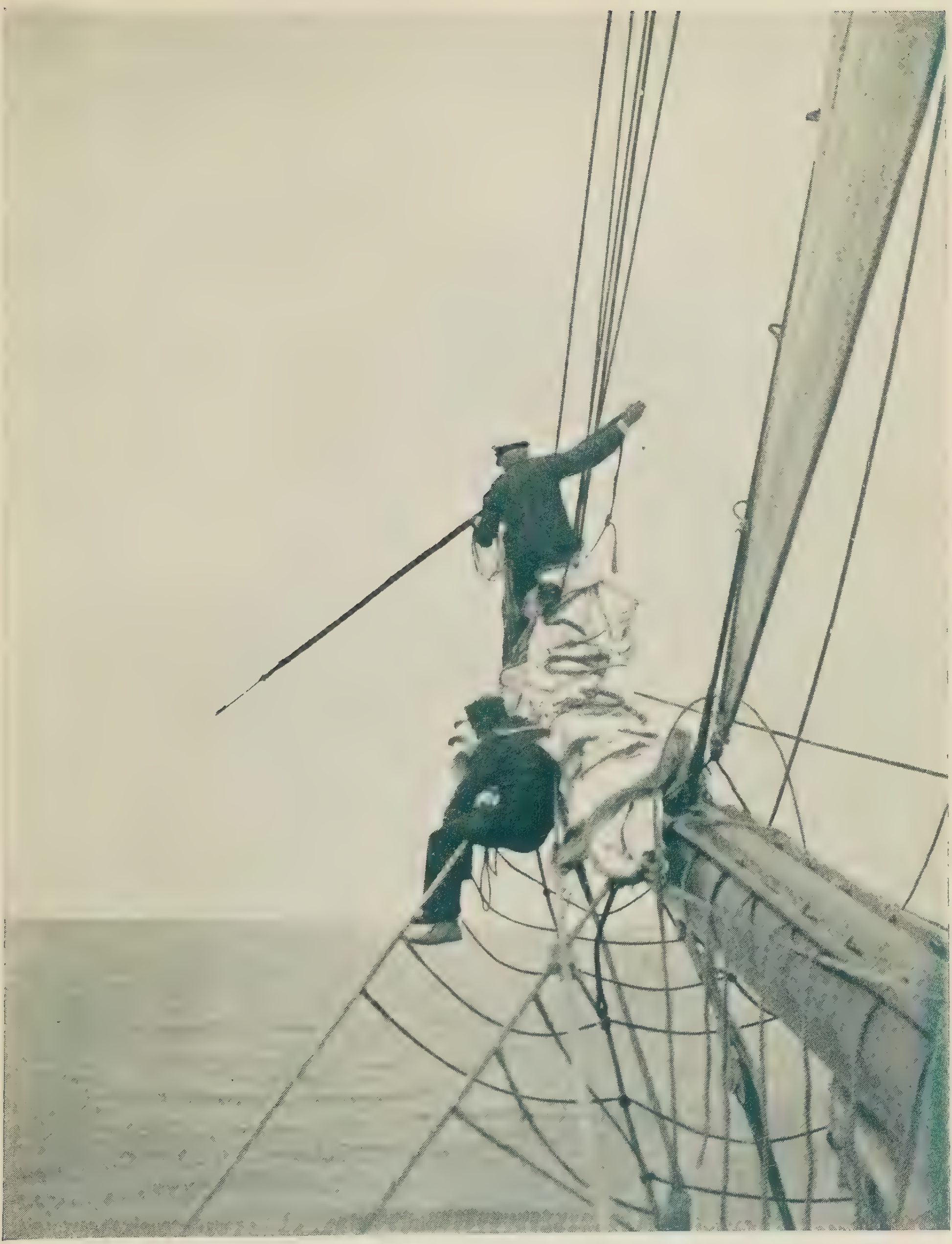
SWORDFISH

THE sea has glamour. So have ships and seamen. But did you ever hear of a glamorous fish? Yet such there be—lordly the Salmon, the myriad-hued expiring Dolphin. And still one more—The Swordsman of the Sea.

In his whole bag of tricks the nature faker has nothing quite so useful as the Swordfish. Nothing else that swims affords so good a peg to hang a tale on. For consider. The Swordfish has a sword. The sword has two edges and a point. It will cut and pierce, and does so daily. It is a formidable weapon.

Back of the sword, moreover, is a body whose every line shows power—hundreds of pounds of it, capable of driving the sword through twelve inches of solid oak, as you may see in the South Kensington Museum. The Swordfish, furthermore, looks the part of ocean swashbuckler to perfection. No nature faker in his senses could be expected to overlook so obvious a point.

So in the storybooks we have the Swordfish parading gaily up and down the Seven Seas, sticking his sword into this Whale for the mere joy of slaughter,



It's a long throw from the pulpit on the bowsprit to the Swordfish in the water

COCONUT MILK RIGHT OUT OF THE SUN IS ALWAYS GOOD AND COOL TO DRINK

TWO WEEKS OF GOOD EATING FOR THE WHOLE SHIP'S COMPANY carving holes in that Shark as an expression of moral disapproval, and clashing in furious combat with a rival Swordfish, while the fair fencer who is the *casus belli* leans, as it were, out of her balcony and observes the massacre with tepid interest. After which the honeymoon begins.

Giant Squids, huge Sea Elephants, man-eating Sharks, fish-catching men, small boats, tall ships, and what not—all take on the nature of pincushions when the space writer turns his Swordfish loose.

But when the nature faker has done his worst, and every suggestion and invention has been exhausted to make this magnificent creation ridiculous, in his true character the Swordfish remains the most exciting and romantic figure in the sea. And what other kind of fishing, now that the old whaler has been replaced by an iron steamer, and the old harpooner by a harpoon gun, compares in dramatic quality with taking Swordfish in the open ocean?

At this point I spare you the usual description of a trip in a Block Island swordfisherman for the cogent but perhaps unusual reason that I never made one.

According to the books, the globe-encircling Broadbill Swordfish, which keeps so many schooners sailing out of Boston, is fairly common in the Galapagos. But although we had spent a month in the islands, no Broadbill hove in sight until we ran up the strait between Narborough and Albemarle on the way to Tagus Cove. There, as we came into the sheltered water behind the southern lobe of Albemarle, the wind died out completely, and in the cloudy calm, with very little left of the great Pacific roll, we had a real chance to see what the ocean had to show us.

I was glancing over the side when I saw just abeam and close aboard what I took to be a good-sized Shark. Then three others, all four finning high, and quite undisturbed by the nearness of the *Mary Pinchot.* When I looked again I could see the bony ridges in the tail of one of them. Swordfish at last!

I shouted, running for the pulpit on the bowsprit end for all that was in me. Giff and Stiff hustled up the rigging to keep the fish in sight. The tub of whale line was cleared. The harpoon, ready in the bow, was bent to the line and carried to the pulpit. We were all set.

Luckily we were under power. The Captain swung the ship. The Swordfish, lazily moving now this way, now that, showed as a blot of deeper blue against the blue water. Then he swam leisurely across the bow. I leaned far forward in the pulpit, lost sight of all the world but that long smooth back, gathered myself, threw—and missed.

Promptly we went after another. But chasing an erratic saunterer like the Swordfish in a vessel of our size is far from simple. In spite of skilful handling, when we came together the fish was headed one way, the ship another. The distance between was increasing every second; so, like the gentleman who tried to catch the ferry boat in two jumps, I threw in desperation, and the ocean swashbuckler abruptly ceased his buckling and went away from there like a shot.

About that same time a Whale blew within a half mile of us, showing his sharp dorsal fin and fifteen or twenty feet of back above the surface, and there were Sea Bats also in these populous straits, which offer the finest stretch of smooth water we saw anywhere in the Galápagos, and bid fair, I think, to become one of the famous game fish grounds of all the world.

Next day, at the very end of August, after traffickings with Penguins and Flightless Cormorants which have no place in this chapter, we started at last on our 3000-mile jaunt across the Pacific to the Marquesas. But hardly were we fairly off when a Swordfish stopped us short.

I am sorry to disappoint you, but he did not stop us by charging the ship head on. In the nature stories he would. Yet since I recognize what is required of me by a decent regard for the expectations of mankind, here kindly consider as inserted such expressions as guardian of the passes, steely rapier, flashing falchion, swordsman of the sea (this one several times), armed sentinel, tierce, carte, terror of the deep, etc. As a reader of current fiction you will have felt the lack of them. We strive to please.

When I first sighted this fish it was meandering calmly along not a hundred yards off the port quarter.

We swung the vessel and went after it. And as we swung the Swordfish swam right through our wake—usually enough to put any Swordfish down—and paid not the least attention to it.

I hustled to the pulpit, the schooner answered her helm like a catboat, and almost at once I got a very decent shot as the fish crossed ahead of us. The throw would not have been a bad one, except that I totally forgot to allow for the forward motion of the ship. It would have been a center hit if the *Mary Pinchot* had been at anchor, which she wasn't.

Shortly afterward Giff hailed the deck from the forerigging and reported splashes of foam dead ahead. We made for them at full speed. Soon in the white water we could pick out great forms of leaping fish. Gradually we made them out as Porpoises, in a most magnificent school. They were traveling straight away from us at great speed, often shooting several times their length out of water.

The line of rushing, leaping, tumbling bodies must have been nearly two miles long, and the number of individuals enormous. They seemed to be as densely packed together as sardines in a can.

A more impressive sight I never saw at sea, nor a more aggravating one. For we had pressing business with one or two of this unaccountable multitude as collectors for the National Museum, which was hungry for Porpoise skulls, and yet the nearer we came to them the faster they traveled.

There were apparently two kinds, each of which kept to itself—on the left of the line a smaller sort that was olive brown on top and of a much lighter brown below; and to the right a larger sort that was black all over.

At first they were going due west, but very slowly the whole line swung until the army was headed first north and then east. We must have followed them for an hour without getting closer than a couple of hundred yards. Finally we satisfied ourselves that the nearer Porpoises were consciously and purposely keeping away from us, which was remarkable, for Porpoises usually close with ships instead of avoiding them. Then we saw that the chase was hopeless, and set the vessel on her course again.

Porpoise skulls from the Pacific were among the things the National Museum wanted most, and we sent home what few we could. But since Porpoises are warm-blooded animals, with brains very many times heavier in proportion than those of any fish, and since some experience in hunting and observing them has made me feel that a Porpoise knows about as much as a good dog, I never shoot at one, nor throw a harpoon at one, nor do what would injure one in any way, unless there is a genuine reason for it.

Promptly after we dropped the Porpoise caravan we sighted another Swordfish. After some maneuvering this one crossed our course inside the pulpit, so that we actually forced it to swim under the ship. That should have been the last of it, but the poor fish came up again almost at once, and I got my shot.

This time the weight of the hickory harpoon handle thrown from a height of twenty feet, sank the whole iron, and several inches of the wooden shaft besides, into the fish near the dorsal fin. I thought I had broken its back, for it lay motionless on the water till I lost sight of it under the starboard bulwarks.

But in a moment the men who were handling the line on deck reported a loose line and a lost fish. The heavy hickory pole was broken short off above the harpoon socket, at a place where it was over an inch in diameter, and the iron had pulled out. That Swordfish had waked up and made use of the power that was in him.

A few minutes after losing this fish someone in the rigging sighted another. Before we reached it I had rustled a long spruce pole from the top of the deckhouse, and the Mate had rigged it. We were ready again.

That Swordfish was tame as a cow—tame as the Porpoises were wild. Ships were nothing to him. He swam serenely under the bowsprit, almost directly under the pulpit, and he gave me as good a shot as anyone could ask for. I threw with everything I had. The iron struck almost in the middle line. It went straight through and cut the skin on the other side.

This fish was hit so hard that for a minute or two he lay as if dead, with the spruce pole, broken in two, showing plainly above the surface. Then he came to, went down, and proceeded to take out a hundred fathoms of line.

We tended that fish, as the swordfishermen say, as if it had been made of sugar candy. We held no harder, pulled no harder, than one hand could hold or pull, which is the rule back home, and a good one too. This would be my first Swordfish if we saved him. I felt like a boy with his first trout.

The Captain dropped the jibs and let the ship lie broadside to the wind under the fore, main, and mizzen. We took the line aft to handle it more carefully. The whole ship's company stood around and gave advice.

We gained a little, and then lost it. And did it again. And again. Finally I took the line myself, to be absolutely sure not to lose the fish by playing him too hard. And after three-quarters of an hour I felt him weaken and begin to rise. And then, when at long last the fish came in sight, we all groaned together because he fell so far below the awe-inspiring monster we had been expecting all that time.

The fight was nearly out of him. He had done his best, but at length his great eye was turned toward us as he lay on his side, and his fight was over.

Finally we slipped over his tail the bowline that made him ours for good, and hoisted him on board.

And then we had to change our minds again, for the fish was ten feet ten inches long, sword and all, and weighed 316 pounds.

Two weeks from the day we struck this fish we ate the last of him. Nothing better ever came out of the sea.

In this story, which is told as it happened, I figure as a moderately good harpooner. But that is just a happen-so, and far beyond my usual performance. I have seen enough to know that to be good at harpooning a man must have qualities of hand and eye like those which go to make a crack trap shot or a highly skilful dry-fly fisherman.

The harpooner must meet his game under conditions no less varied and difficult than those under which the hunter meets his bird, and under special handicaps besides which the man with a gun never has to face.

The hunter when he shoots is standing on firm ground. But the deep-water harpooner must throw from a tiny platform that has more kinds of motion than an angle worm has angles. It is moving forward or turning sidewise or both. It may also be swaying from side to side. It may also and at the same time be rising and falling violently—from the very surface of the water to fifteen or twenty or even thirty feet above it.

If that is not enough, the mark to be thrown at may itself be rising or falling in the water in a way

WHERE C. B. FOUND NO STAIRS, SHE USED A ROPE AND GOT THERE JUST THE SAME

THE MARQUESAS ARE MORE APPEALING THAN THE GALAPAGOS

THE *MARY* WAS REASONABLY FAST UNDER SAIL hard to detect, but that must be detected and allowed for if the throw is to go home. And, of course, the fish is moving as the bird moves in relation to the shooter, although more slowly.

Finally, unless the fish shows above the water, or unless you are directly above it, your target is not where it looks to you to be. The ray of light which runs straight from flying bird to hunter runs bent from submerged fish to harpooner, and the amount of bending varies with the depth of the fish below the surface.

At this point the famous question to the cross-eyed colored marksman is in order: "Is you shootin' whar you aim, or is you aimin' whar you look?" To hit a fish under water you must often aim your throw precisely where the fish does not appear to be.

I know it sounds fishy, but you can prove it for yourself. Try this experiment. Put a penny in an empty teacup on a table. Place yourself so that the coin is hidden by the teacup's rim—so that you just can't see it. Then get someone to pour water into the cup, while you are careful not to move your head. Suddenly the coin will come into sight.

The fact is that the rays of light are bent when they emerge from the surface of the water, and that you are in some sort looking around the corner, like the man who bent his gun acircle and shot all round the hill.

Just so with the harpooner. He must hit his fish where it is, and not where he happens to see it—small wonder that certain harpooners of my acquaintance show skill at least as great as that of any rod-fisherman.

I have had my share of big game fishing at sea, and of Trout and Bass and Salmon fishing ashore. My longest fight with a Broadbill on rod and reel lasted three hours and a quarter, and then he got away. My favorite dry-fly rod weighs one and three-quarter ounces. I fish for Trout with barbless hooks, and usually return to the water more legal fish than go into my creel. Hence I am not without experience of the most delicate fresh-water fishing.

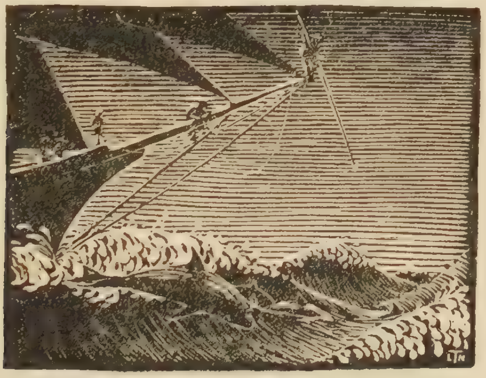
On salt water I have used light and heavy tackle, and have thrown the harpoon from canoe and skiff and launch and schooner, for many a year. I have struck fish with irons that ranged in size all the way from the point of a shark hook to a heavy whale harpoon. I love the rod. I love the iron.

But taking all things together, for me there is no thrill in rod and reel that compares with the chase, the throw, the rush of the ironed fish, and the fight that follows. For me line, shaft, and iron make the climax of good fishing.

More than once I have heard harpooning decried as unsportsmanlike, but always by persons who lacked the hardihood to be successful at it. My hat is off to the men who have the accuracy of hand and eye, the swift decision, the physical power, and the knowledge of the game and the sea that go to make the highly skilled harpooner.

I know many a fisherman on the New England coast who will go offshore in his launch, find his Swordfish, bring fish and launch together by skilful handling of his tiller and his engine, strike the fish, fight him for an hour or two or three, lance him, put the fluke rope on him, and hoist aboard three or four or five hundred pounds of swaying weight, and do it all single-handed, entirely alone, quite commonly out of sight of land, and always as a mere incident of the day's work.

Harpooning demands and develops the highest qualities in those who follow it. Self-reliant skill at sea can hardly go much farther. This is high sportsmanship.



XVI

THE BIG WATER

IT IS difficult to sense the immensity of the ocean. The ship is like a beetle crawling under a bowl constantly pushed forward. Day after day the voyager remains in the exact center of the same circumference. Occasionally a rain squall or a bank of clouds may seem to place him nearer one edge than the other, but the sun comes out and the clouds disappear, and once more the distance to every part of the horizon is precisely the same.

Day after day the swell strikes us on the port quarter and races past. It must be traveling twenty or twenty-five miles an hour to the ship's average of six or seven. Day after day the *Mary Pinchot* sways to it, but we become so accustomed to its motion that we forget all about it, and it is only when something slides off a table, or we rise from long sitting, that we notice it at all.

This leg of our journey was through the region where seventy-one per cent of the winds come from the southeast. We started off with more than a little easting in the wind the first morning, so that for the first time since leaving Panama it was abaft the beam.

Our two upper topsails, three jibs, and jib topsail were all set. What we needed was more wind.

In the afternoon of the second day out we got up the balloon jib, which made a tremendous difference in her speed. It was an enormous affair, nearly as long as the ship, and ran clear to the top of the foremast. It broke two sheets in a rather moderate breeze before it was rigged with a block on the cringle so as to make the sheet double.

Thanks mainly to this elephantine jib, we made 139 miles in the following twenty-four hours, which, if all went well, would be mainly responsible for a quick passage to the Marquesas.

The day we were almost exactly under the Equator I dictated my diary sitting in the sun, yet with a sweater on, and cold as blazes at that. At quarter to four in the afternoon I got so cold I had to stop, and Morris Gregg confessed that his hands were so chilly he could hardly write. He went below and warmed up at an electric bulb before taking the rest of my story.

After supper the man at the wheel was wearing his pea-jacket, and as for me, I went to bed with an undershirt beneath my pajamas, a sweater over them, and three blankets on top of that.

At the same time the wireless bulletin gave us the temperature at New York as ninety-four and said the whole East was sweltering in the worst heat wave of the season.

One night soon after leaving the Galàpagos, C. B., Giff, and I slept on deck, where it was so cool that I had to go below in the middle of the night and get another blanket.

C. B. was frequently found of a morning under six thicknesses of the thin summer blankets we used. It was on such mornings as this that we particularly appreciated the Ecuadorian coffee which Carlos Gil had given C. B. Torp roasted and ground it, and we brewed it in the electric percolator. It was simply delicious, lacking only a little bitterness to become the very pleasantest of coffees.

The Ecuadorians make their coffee by roasting the beans very brown, then grinding them very fine and pouring on hot water until the coffee is almost thick enough for treacle. After it is cold they put a little of this sirupy decoction into a cup and fill it up with hot water or hot milk. Both Alvardo and Gil gave it to us made this way.

Not until the twelfth day out did the weather begin to be really hot. Then at last the sun bit, and my shorts and undershirt were not enough to keep me from dodging continually into the shade.

I had expected to be furiously in need of occupation during this 3,200 miles of trade-wind sailing, supposing that the sea and the sky of one day would be just like those of the last and the next. I thought we should all be caught in the need for something to keep us busy. It never occurred to me that each of us would keep himself or herself completely occupied. So I devised tasks for each.

For example: We must all keep our cabins in order, and make our own beds. I made mine every morning, and it took me all of two or three hundred seconds out of the 86,400 seconds in the day. That left me only 86,200 seconds for which to find other occupations during what was left of each twenty-four hours.

When I worked it out, that didn't seem much of a refuge from the curse of idleness. The truth is that the days were not long enough, that dinner came too soon after breakfast, and supper too soon again, for all the things we had to do.

Our little world was perfectly ordered. Most of us were up on deck and under the hose at six. Then came an hour or so of work before breakfast at 7:30, which consisted of oranges, pineapples, papayas (so long as they lasted), oatmeal or some other cereal, honey or jam, eggs, bacon, and toast, with tea, coffee, or cocoa, as each might choose; Sunday morning hot cakes; and occasionally canned fish balls.

We had our last dish of Swordfish at our fourteenth dinner out—the Swordfish harpooned the day we left the land behind. Most excellent eating. Upon this occasion Professor Pilsbry, in a jocund mood, suddenly contributed the following:

Lives of Swordfish all remind us
  We can make our lives sublime
And, departing, leave behind us
  Great big steaks for dinnertime.

To which I added:

Big steaks which perhaps another
 Sailing o'er life's stormy main,
Some poor wandering half-starved brother,
 Eating, may take heart again.

After breakfast, work or play till dinner at noon, at each one's choice. At dinner, soup, fish or meat, with canned spinach, string beans, and sometimes potatoes. Afterwards more work or play till supper, at five. That usually meant thick soup, meat or fish, vegetables (salad when we had it), and dessert.

Bedtime for me was early, usually around 8 P. M. As a rule I was in bed before Giff.

For every meal after leaving the Galápagos, breakfast included, we had alligator pears, a regular ration of which ran from one to three pears apiece. At the ruling Galápagos price of one cent each, Giff sometimes succeeded in getting down three cents worth at one sitting.

After supper the brown Porpoises, which avoided us so completely in the daytime, sometimes appeared about the bow in the darkness to amuse and tantalize us. They moved with amazing speed, crossing back and forth in long sweeps in front of the ship as if she were standing still. During the first days out I threw a harpoon at them more than once, but my reaction time was entirely too slow for their rapid motion. Babe Ruth might have hit them, but I couldn't.

USUALLY THE PACIFIC WAS TRUE TO ITS NAME

All at once Rosie decided to be a lap turtle

Rosie insists on personal attention

Once Mr. Bourget (at my request) called me at 2 A.M. to see and wonder at the lighting effects of their phosphorescent wakes. This time the Porpoises were crossing under the stern, apparently passing close to the rudder, then coming out of the water fifty yards away, turning, and doing it again and again. I could not guess what they were at until Giff suggested they were probably after small fish gathered beneath the counter.

Occupations aboard, as may be imagined, were varied and various, ranging from the Chief Engineer's vital one of overhauling the engine to Giff's struggles with his book on the South Seas, his algebra, and his English history. At this juncture the corn laws were troubling Giff considerably, but light dawned when C. B. explained that conditions in England in 1846 greatly resembled some of those in present-day America.

C. B. lost no time in starting a course of calisthenics for all of us, to be taken on deck just before supper. A good idea, and we actually carried it out. Occasionally variety was lent to the scene by the use of one of our thirty- to forty-pound turtles as dumbbells.

In addition to being a highly necessary regulating and uplifting influence in a crowd of mere men, C. B., as the only woman on board, naturally had charge of the housekeeping. Every day the cook brought her his idea of what we ought to eat and she approved it or revised it at her own sweet will.

I found it advisable to do a certain amount of inspection of the ship. One day was put in getting the galley cleaned up. More than once I went scouting for cockroaches in the wee small hours. Going over the ice box and the storeroom took most of another day.

Every day there was Diary to dictate and the writing and rewriting of stories which have since turned into chapters in this book. You write about things straighter when they are hot off the fire, and you tell fewer fairy stories that way.

Prof occupied himself largely with destroying the innocent lives of tree snails, boiling them in portions of our precious fresh water, till somebody suggested using the Pacific Ocean instead. Afterwards he extracted the contents of their shells with a bent pin and preserved shell and animal for future study.

A. K. skinned countless birds—Flightless Cormorants and Galapagos Penguins, together with other specimens, of which the ice box seemed to contain an endless store. He urged us to feast on decorticated Cormorant or depilitated Penguin, but nobody dared.

Between times, working with A. K., Prof transferred lizards, spiders, fish, and other specimens from one receptacle to another, after wrapping many of them in cheesecloth to prevent breakage and reicing them with fresh formalin or alcohol.

A. K. often raged through the ship demanding labels. He proclaimed that a specimen is a label with an object of natural history attached—that a specimen without its label is worse than useless and fit for nothing but to be trampled under foot of man. Which nobody can deny.

When Prof was not snailing he was sleeping, at which innocent amusement he was easily the first among his peers. When A. K. was not labeling, he was beating us badly at the game of deck quoits, at which he became the undisputed champion of the ship. His sonorous slumbers occurred only at night.

Cleaves photographed in the daylight and developed in the darkness. He was the owl of the ship's company. Time and time again when I got up in the middle of the night to see that everything was going well, as was my reprehensible custom, I found Cleaves laboring over his photographs. He was the hardest worker aboard.

Doctor Mathewson found himself spending an astonishing amount of time on the minor ailments of the ship's company. It is simply amazing how many blisters, bruises, cuts, and scratches, to say nothing of toothaches, headaches, backaches, and stomach aches, can materialize from twenty-seven human beings in the course of twenty-four hours. In his leisure moments, The Doctor fished, slept, read, or supplied a willing victim for A. K. in the deck quoit handicap.

The two boys were all over the ship. One moment in the harpooning pulpit at the end of the bowsprit, the next climbing the shrouds of the spanker at the stern, or most commonly of all sitting on the bull'shorn spreader on the foremast far above the deck, with nothing on but almost invisible shorts, accumulating sunburn and seamanship in equal proportions.

The youngsters swarmed up and down the rigging like ants in a bush, but when it came to climbing a rope hand over hand they were nowhere with some of the men. One day we had a lively competition as to which one could get himself farthest from the deck with only his two arms to help. In the end the huskies of the watch lost out to the first mate, who was by all odds the thinnest seaman on board.

A landsman may learn what to do on a ship at sea, and he may do it reasonably well, if he has time to think about it. A seaman does it before he has time to think.

Handling a ship is largely a matter of rules and customs that a man can learn just as he learns the multiplication table. Seamanship is acquired only by living those rules into the very essence of your being so completely that in emergencies you act right before you have time to think right. The difference between landlubber and old salt is the age-old difference between professional and amateur—between the man who does something pretty well part of the time and the man who does it perfectly all of the time. I am not a seaman but at least I know it.

There would frequently be some reading aloud after supper, often from the original works of Stiff, Giff, C. B., or G. P., or from certain of the Prof's letters home, which we all relished immensely. We were good listeners most of the time, but we all remember the night when, after a strenuous day, Prof read on serenely from the *Voyage of the "Beagle"* with every member of his audience sound asleep around him.

Practical jokes at the expense of one or another of the party flourished. Prof was the author of the most successful one at the expense of our serious-minded photographer. Cleaves had undertaken to sort and file the numerous letters from people who had wanted to voyage with us to the South Seas. Prof, observing his concentration, composed and caused Sparks, the radio operator, to write the following letter from a mythical maiden in Pennsylvania:

Hon. Gifford Pinchot,
Milford, Pa.
Dear Sir:

I have seen in the Manayunk *Independent* that you have a voyage to the South Seas in view. As I have all my life desired to visit these charming islands, I am applying for a place in your party.

I am a graduate of the Manayunk High School and received a prize for my essay on the "Heart Life of Charlemagne." I am five feet four, and nineteen years old. I inclose a picture taken at the Atlantic City Beauty Show. I am the second girl at the left in a bathing suit.

I have not had much sea experience but have boated a good deal on the Schuylkill river and can sing, row, and dance; also swim and typewrite.

I would try to be useful in any capacity and I hope you can find a place for me in the party.

Yours sincerely
Violet Milligan

This effusion he prevailed upon me to "answer":

Miss Violet Milligan,
Manayunk, Pa.
Dear Miss Milligan:

I am in receipt of your well-written application to accompany my party to the South Seas.

Mrs. Pinchot and I both appreciate your application and regret that it has been made too late.

You might have profited greatly by contact with at least a few—a very few—of our party. Habits of order, industry, assiduity, and perseverance may indeed be acquired on such a journey. To be deprived of these associations and of that acquaintance with wild and untrammeled nature from the snail to the seal which the expedition is intended to promote is hard.

I sympathize, but I am, my dear young lady, in this matter, as in so many others, helpless. The decision has been taken out of my hands.

As a matter of fact, where you made your mistake was in sending your picture. Mrs. Pinchot, whose fiat in all matters concerning this trip is final, directs me to say that under no circumstances would she admit to our society any person capable of wearing such clothes—if, she adds, "I can call them such."

I yield, but with how much regret you will never know.

Sincerely yours,
Gifford Pinchot

P. S. Have you got any more pictures?

The letter and my supposed answer were slipped into the pile Cleaves was examining. As soon as he struck "Violet's" letter he fell nicely into Prof's trap and read it to us for our amusement.

"Let's hear the answer," someone called out.

Cleaves started to oblige, reached the middle of the letter, and began to falter.

There were cries of "Go on, go on."

The helpless Cleaves appealed to me: "Do you want me to read the rest of this letter?"

"Certainly," said I.

So the letter was finished, to the great discomfiture of the reader, who felt sure he had stumbled into some sort of indiscretion, and not for some minutes did the loud laughter of his listeners reveal to him that the letters were fakes and the joke was on him.

The *Mary Pinchot* carried no mascot. C. B.'s Great Dane, Dusty, after much discussion of the matter pro and con, had been left at home. I questioned whether he could be relied on to find his sea legs, and feared lest in bad weather he might break the legs that he had already.

In the absence of Dogs, Penguins, Cats, Goats, Albatrosses, Sea Lions, and other wild and tame objects of affection, all of which had been acquired or suggested during the trip, the half dozen Albemarle Tortoises we had picked up at Villamiel filled the rôle of pets fairly well.

When let out of their crates, the five little fellows one day showed unmistakable signs of being thirsty by trying to get some of the salt water still left on the deck from the hose that morning. C. B. brought up some fresh water, and one particular turtle drank a pint and a half, finding meanwhile some difficulty in adjusting his mental vision to a saucer. In the end his table manners left nothing to be desired.

Four of the five, especially Shoe Shine, became perfectly friendly, and ate bananas, pulp and skin, sweet potatoes, and orange skins from our hands with the utmost avidity, sometimes finishing off with a friendly nip at a finger. They would bite at anything yellow, such as C. B.'s yellow trousers, or a sunburned ankle, and they failed entirely to learn from experience.

The big one, Rosie, because caught at Santa Rosa, had been very roughly handled by the Ecuadorians who brought her down to the coast. They had first tried to move poor Rosie seaward by rolling her over and over, and when that failed they tied cords to each of her legs and carried her that way. Naturally she was offish. It took a long time, but the Captain finally succeeded in making her eat. My diary remarks:

> "Rosie has been eating freely of late, especially melon rinds, while the little turtles are becoming omnivorous. This morning C. B. was feeding them with strawberry jam on toast, and one of them was simply gorging it."

Before we were halfway across, Rosie's shyness disappeared entirely, and then the one thing she wanted was company. At daylight every morning she would

The vast Pacific under a trade-wind sky

UA POU, THE ISLAND THAT CAN'T BE MATCHED begin to strain against the bars of her pen, and she kept it up till she was let out, if it took hours. Once out on deck she was happy.

Like some other turtles and people, Rosie was incapable of changing her mind. When she started forward you might turn her around ten times, but aft she would not go. Finally she developed a sort of mania for the forward part of the ship, and eventually had to be fenced off. Whereupon she crawled into a corner behind the water tank and sulked.

One day Rosie decided to climb up on a long chair where C. B. was stretched out. Twice the Captain and I pulled her off and headed her the other way. The third time Rosie crawled right into C. B.'s lap. One hundred and fifty-four pounds of hard-shell turtle is a lapful for any lady.

Finally Rosie turned out to be no lady herself, for his plastron was found to be concave. He was a very cheerful Rosie when left in Tahiti in the kindly charge of Mr. Charles Nordhoff, there to remain until warmer weather made it safe to bring him home.

As the days hurried by, I was more and more impressed with the regular course the Pacific equatorial sunsets seem to follow. First huge streamers of light strike across the western heavens as the sun sinks behind great banks of clouds. Then, as it nears the horizon, openings in this bank appear, through which the yellow surface of the sun shines like a baleful fiery eye. Then instead of a golden glory, grayness spreads over all the horizon, to the resentful disappointment of the beholder, who feels hurt that the sunset which promised so well at the beginning has died so inconclusively.

But the end is not yet. Ten minutes later the afterglow begins to well up in the west. The sky takes on the quality of a luminous gas. Clouds blend in as darker masses, but still filled with light, and a warm and cordial radiance overspreads the world. That is the real sunset. It is beautiful, but with a quiet and restful beauty, in delightful contrast to the fierce sun of the long day.

There was about three-quarters of an hour between the sinking of the sun's disk in the ocean and the coming of darkness. Then the stars winked into being and the night was upon us, with its fiery phosphorescence all about the ship. But it was never really dark. Always, even at midnight, there was light enough to distinguish the sails and much of the rigging, and the figures of the watch on deck.

Many times C. B., Giff, and I slept in the open at the stern, or tried to sleep, for there was so much to see. The wake was so full of lights that at times it was almost impossible not to believe there was a porthole under the counter with electric bulbs shining through.

Yellow and orange lights flashed brilliantly at intervals both in the center of the wake and at the sides, some on the surface and some deep down. They were incredibly vivid, and the mass of many of them was bigger than a barrel. The cold fire of phosphorescence was familiar enough, but the size of the glowing masses was astonishing. Even the less enormous but more brilliant ones looked as if they would fit into nothing smaller than a ten-quart pail.

One night the normal trade winds came at last. Between midnight and 6 A. M. we made over fifty-eight miles without the engine but carrying the balloon jib and every other sail we had. I was on deck about two o'clock that morning, and the ship was going like a race horse. It was a delight just to watch her go.

Daytimes the sky was usually clear, with trade-wind clouds, of course, but on one Friday there was a remarkable field of mare's-tails (which Cleaves photographed), all headed with the wind. It was a dainty and a lovely sight, but it did not bring us the strong breeze we longed for.

We had been making an average of 150 miles a day even with breezes of force one and two, for the equatorial current carried us westward at the daily rate of somewhere between fifteen and forty miles. In such light airs the heavy Pacific roll often spills the wind out of the sails, and slats the booms back and forth with a noise that is literally like thunder. It seems as if nothing made by man could stand up under such violence.

We were all relieved and delighted when a breeze of force three to four held them steady and cut the thrashing and banging short.

Out of the southeast the huge blue quiet Pacific swells often towered behind us, passed unceremoniously under us, and threw us high in the air, so that the breadth of our horizon was suddenly doubled, then passed ahead of us, and with the passage turned gray and lost half of their appearance of height and formidable power. We watched all this happen what seemed like thousands of times, and always with wonder and delight.

Often I went up and sat on the foremast spreader in the morning, and in the afternoon at the head of the mizzenmast where the light was better, to watch the Flying Fish. When they struck the top of the little waves they bounced exactly like a baseball on a diamond. They seemed to get a new lease of flight, if not of life, every time they did it, even in a very choppy sea.

The largest of them were able to follow the moving irregular surface of the waves, keeping the long lower lobe of their tails touching and beating the water like a screw, with a remarkable sureness of coördination. They flew in long smooth courses swiftly, bearing at first almost into the wind, and then gradually veering away from it until, when they fell, many or most of them had the breeze fairly abeam. Every now and then we found one or two lying on deck in the morning, but never enough to eat.

From the pulpit, which at moments was from four to six feet above the surface, and at others more than

WE TOOK A LITTLE FRUIT ON OUR TRANSPACIFIC TRIP

PALMS SHADE THE SMALL MARQUESAN VILLAGES

After three thousand miles at sea, my hat was off to Hiva Oa thirty, I could look down on the Flying Fish as they burst out of the water, and more than once could catch the iridescence of their wings.

Before taking wing a number of them rushed back and forth in short zigzags under the bowsprit just as they did at night under the light at Cocos Island. In flying the larger fish stayed very close to the surface. The little ones, butterfly-like because the front and back pairs of wings are much more nearly alike in size than in the larger fishes, were often thrown high above the surface as a gust of wind struck them. These smaller ones made repeated short flights, and were almost impossible to detect in the water. I am sure the least one I saw was not over an inch long.

From the flying fish my attention wandered to the waves out of which they sprang, the waves that Homer calls "the unnumberable laughter of the sea." Most of the breaks were on the backs, not on the advancing fronts of the waves to which they belonged and were speedily left behind, so that more white appeared in the sea to leeward than to windward.

A rough classification of waves began to form in my mind, when I first guessed that I was looking at every gradation of surface condition from a flat glassy calm to the great Pacific roll itself.

So far as I can formulate it, this is what I saw:

At close intervals, meaning by that a very few inches apart, were narrow glassy bands roughly like a bent oblong in shape, on which there were no ripples whatever that my eye could catch. They occurred in the lee of little wave crests and formed a very appreciable fraction, perhaps a quarter, of the total surface.

Next to them came fine ripples with several minute crests to every inch.

Next to them, larger ripples, two, three or four inches apart.

Next again, still larger little wavelets whose crests were separated by twelve or eighteen inches of space. After that came several gradations up to waves about a foot high.

Higher than these was another series perhaps from four to six feet in height. Then came the trade-wind swells, eight, ten, twelve or perhaps even fifteen feet from trough to crest, and finally, underneath them all, the great Pacific roll whose troughs were valleys and whose crests were several hundred yards apart.

What all this seems to amount to is that the surface of the ocean at any instant shows every degree of wind disturbance from zero through a fixed series of steps (which doubtless depends on wind and current) up to the largest wave then running (in our case the great underlying Pacific roll) which carries every size of smaller wave upon itself.

In really heavy weather Captain Brown said the regularity of the wave series was even more striking.

There are far more whitecaps on a windy day than meet the casual eye. When the great rollers do not quite break, the smaller waves and wavelets do, so that he who looks closely sees a long array of breaks varying from the little ripple of foam hardly visible at a few fathoms, to the impressive break that makes its white mark on the blue sea half a mile or even a mile away.

On one side of the ship the ocean was apt to be of an intense blue, the white manes of the rollers brilliant and clear. On the other side the angle of the sunlight gave the surface a grayish tint and the breaking crests seemed far less numerous and impressive.

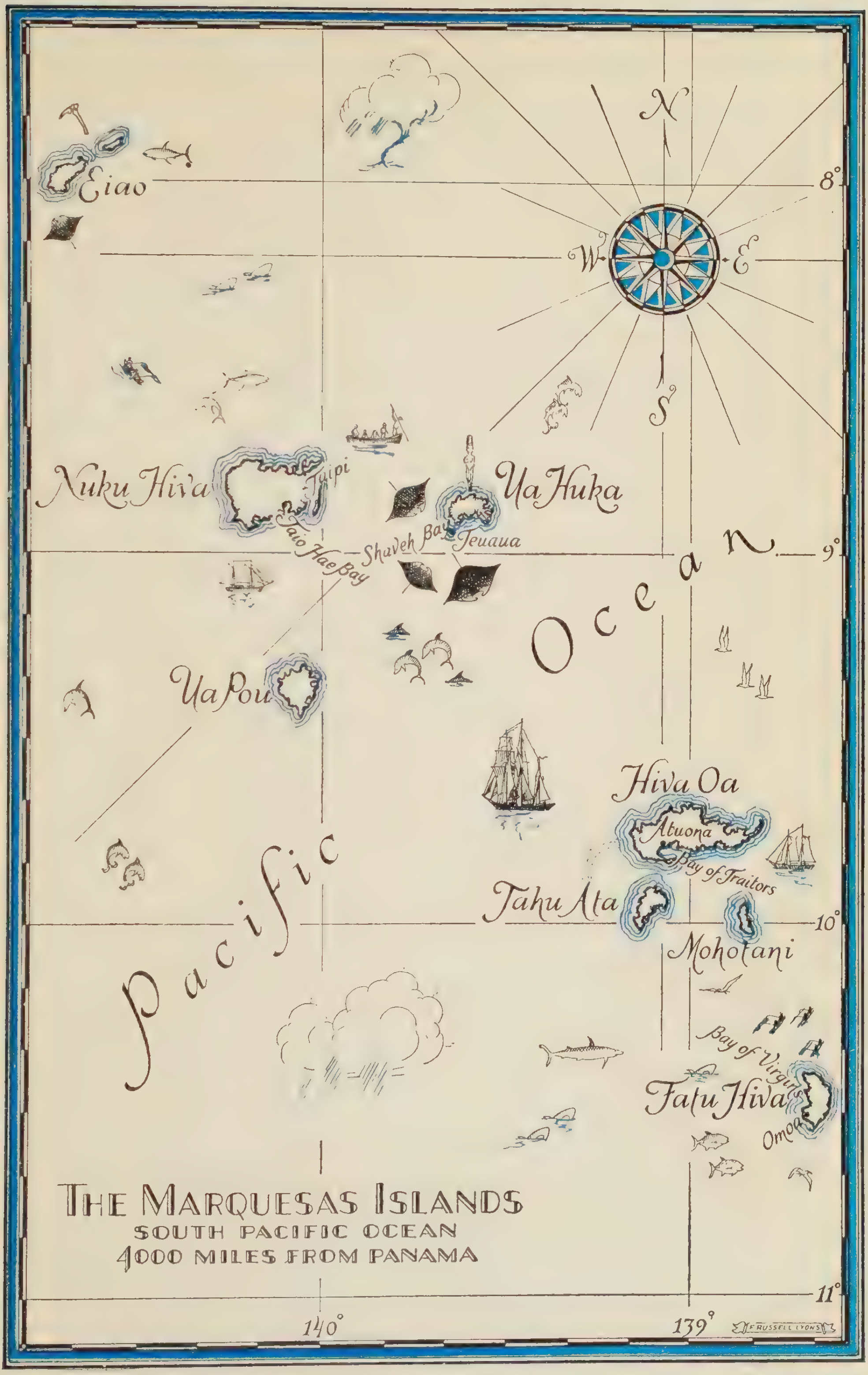
One night before supper a rain squall began to catch up with us. Just in front, as it seemed, of the gray streak of rain-beaten water was a magnificent rainbow, complete from purple on the inside of the arch to red on the outside, and a little way beyond it to the north was another rainbow, less vivid but still plainly visible. Both the rainbows came steadily nearer to the boat. It was a moving sight.

Then the smaller one vanished, and the arch of the larger one shone complete from the surface at one end to the surface at the other, and drew steadily closer. At last it seemed as if the pot of gold at its foot could not be more than fifty yards behind our stern. A volley of voices of half a dozen treasure seekers rang out. They were all staking rival claims. Then the rain caught us and the rainbow doubtless came aboard at the stern and went off at the bow, had there been another ship ahead of us to see it.

The night of September tenth was very rough and gave us all a realizing sense of what a power boat would have to go through on a passage across the Pacific. There was no wind, and so we rolled until I had to get up several times to see that everything was fastened, shipshape and Bristol fashion.

About four o'clock in the morning two or three tremendous seas threw us far over until it seemed that everything broke loose—crockery, typewriters, books, and collections. The first mate, who was below, came piling out of his room wondering how we could be in the breakers, and of the whole ship's company nobody slept through. We always spoke of it afterward as the night we hit the iceberg.

The day we were due to reach the Marquesas we were all up early, of course. At five-thirty I went forward and asked the men (who were sitting about the forecastle hatch waiting for the landfall) whether they had caught sight of the islands yet. They said, no. Almost immediately I thought I saw a thin shape on the horizon. It might be land or it might be a cloud. The second mate got his glasses. It was land. At a range of 3,200 miles and at the end of sixteen days we had hit the very Marquesas Island we aimed for squarely in the bull'seye.


Eiao
N
W
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S
8°
Nuku Hiva
Taipi
Ua Huka
Taio Hae Bay
Shaveh Bay
Teuaua
9°
Ocean
Ua Pou
Pacific
Hiva Oa
Atuona
Bay of Traitors
Tahu Ata
10°
Mohotani
Bay of Virgins
Fatu Hiva
Omoa
THE MARQUESAS ISLANDS
SOUTH PACIFIC OCEAN
4000 MILES FROM PANAMA
11°
140°
139°
F. RUSSELL LYONS

XVII

THE REAL SOUTH SEAS

THE crawling beetle that the *Mary Pinchot* might have seemed to Olympian eyes had found her way across that tremendous sailless waste of water, and at full speed had run into the harbor of her choice, not missing it by so much as a single mile.

The coming of day brought the welcome land into focus and the almost but not quite inaccessible lump of rock that forms Motane Island, slightly to the south of the island of our destination, Hiva Oa. Hiva Oa itself appeared, and almost immediately to the south again the island of Tahu Ata.

An island schooner was sailing out of the harbor as we approached, on her way to Tahiti. We exchanged salutes with her and entered, passing the distant leper settlement with its red roofs and church to the south, and, nearer by, a group of people who waved their greeting to us from the promontory on which Gaugin lies buried.

Land of any sort at the end of a long voyage is bound to be a moving sight. But the appearance of my first genuine South Sea island was unforgetable.

The Galapagos, from which we had come, are dry and hard—at least around the edges. They are scientific. They draw into their shell like the tortoises from which they are named; like the Far North, they challenge and resist. Their very name is full of vigor and the joy of conflict.

The Marquesas are infinitely softer and more beautiful. Majestic and strange, they are at the same time primitive and touching, perhaps because of a certain atmosphere among their people of resigned distress.

Several mountains of the Galapagos are over four thousand feet high, but the eye is led gradually and effortlessly up their slopes by way of modifying foothills. The mountain that rose before us that early September morning was given less than 4,000 feet by the chart, but it dominated the world. The prefatory foothills here were nothing, while two sheer cliffs hurled themselves a thousand feet upward at heaven. Then a step-back, like the new skyscrapers, a sort of second wind, and another upward rush of gray-brown rock and sparse verdure to make Hiva Oa's giant peak—Temiti.

We had to send our boat ashore for the Captain of the Port, who clambered anxiously into it down steep steps covered and uncovered by the swell, came aboard, and welcomed us officially to the island. He had been able, it appeared, to absent himself from his duties of judge, notary public, clerk of the court, commissioner of police, collector of taxes, warden of the jail, and whatever other officials there might be, all of which he was except administrator. Paul J. Nordmann was his name, and he spoke a little English. He knew of our coming, however, and promptly gave us pratique.

Commissioner Nordmann was most helpful and polite. As warden he proceeded to detail the occupants (in principle) of the island jail to act as our guides, carry our cameras, and look after us generally. To C. B. and myself fell the attentions of an enormously powerful and genial fellow, under sentence for assault and battery, and his mate who was serving twenty-five years for assault with intent to kill, in which endeavor we were given to understand he had met with gratifying success.

The killer was a tall æsthetic looking man with a decidedly refined and sensitive face. During the days that followed these peripatetic prisoners were exceedingly useful. They responded agreeably to the impressive English names we gave them; Assault-and-Battery and Battle-and-Murder. Another smaller one went under the name of Petty Larceny. We paid little attention to him.

On the Marquesas they are not troubled with bloody uprisings by the occupants of their prisons. There are no battles with guards and wardens, for the inmates are outmates, engaged in various useful outside employments, mostly in the service of the

Captain of the Port himself. Before turning them over to us, Warden Nordmann severely impressed upon his charges that they must be back in jail to sleep that night.

We walked around the bay to the light staff, and beyond to the village which lay at the mountain's foot in the graceful crescent where Atuona Valley finally finds its way down to the beach. Many streams tumble through this valley and one can hear at the same time, in counterpoint, the boom of the surf and the ripple of brooks.

Low pastel-colored bungalows were almost completely hidden by the profusion of opulent plants, with tall and slender coconut palms overhead. On the beach were five or six boat sheds, including one over a fine thirty-foot whaleboat.

Then our guides hospitably urged us to visit their jail. The tricolor of France flew over it. The yard of the building was fenced in by barbed wire, but the gate was open. So was the door of the jail itself, and every cell was open too.

The prisoners go fishing and hunting when Commissioner Nordmann needs game, work as foremen of road gangs for Collector Nordmann when it is necessary, and act as a personal bodyguard when Judge Nordmann goes to Fatu Hiva, where, according to Notary Nordmann, the natives are dangerous—how dangerous will appear in the sequel.

M. Nordmann was very clear that we ought not to go to Fatu Hiva without protection. He said we

Mt. Temiti seemed to dominate the world

WE WERE THE FIRST STRANGERS THE LEPERS HAD SEEN IN THREE YEARS

The open-door policy for jails at Atuona

Our criminal escort: Battle-and-Murder (left), and Assault-and-Battery (right)

GIFF MOUNTS THE ANCIENT THRONE

THE PREFACE TO AN OLD-TIME CANNIBAL FEAST—ALL BUT THE CLOTHES

A FRIENDLY OLD NATIVE THRUST THIS QUAINT TIKI INTO C. B.'s HANDS could go at our own risk if we chose, that the Chief was a very nice man, but that the island was full of taboos, and that we might get into trouble. He added that a tourist yacht, the *Saint George*, had stolen a native idol, a Tiki, and that it has made no end of administrative difficulties. But it seemed to me we should be justified in taking the worthy Commissioner's advice with a grain of salt.

Opposite the jail is the wireless station, which is able to reach no farther than Tahiti. Its electric plant is so small that it cannot even supply the station with light.

Then through the long straight village street shaded with coconuts and bordered with hedges, and behind them bungalows raised a few feet above the ground, each set back in its little garden. M. Nordmann most kindly put the official residence, then empty, at our service, and took us there and installed us. It was another bungalow, painted light blue with gray trimmings, set in a larger garden than usual, and consisted of a veranda, three rooms, a bathroom with a shower, and a detached kitchen.

The village was extremely clean and neat, and the people simply but sufficiently dressed. The day of the grass skirt is over. There was no noticeable lack of children, but few young people from fifteen to twenty.

Many horses were in evidence, but only one donkey. There were two fair-sized stores and several small Chinese shops.

Many of the children are Chinese half-breeds. A prosperous Chinaman, who had been in business on the island fifty-two years, told some of us interesting tales of Marquesan life a generation ago. The Marquesans, when he arrived, wore no clothing, and cannibalism was in general vogue. Bloodshed was common. He also said that in the interior of the island some of the natives, untouched by civilization, still practice cannibalism to some extent, which is interesting if true.

The aforesaid Chinaman owned the island's one Ford truck. It is a useful vehicle, and there are three whole kilometers of roads for it to travel.

Almost the first thing we did ashore was to pay our belated respects to the bad old gods of the island, at their huge deserted altars up the valley. I say belated because fifty years have passed since the old Polynesian gods have been taken seriously in these islands, and it is longer than that since they have been treated to human sacrifices as a regular thing.

Under the teachings of the French priests, the once powerful gods of the sea, of the winds, of fishing, of fertility, of war, etc., are now regarded by the natives as highly unimportant.

On behalf of the Marquesans of yesteryear it should be said that they never regarded people as food, but only ate them semioccasionally as a semi-religious rite. Moreover, neither woman suffrage nor the Lucy Stone League having then reached

Polynesia, humanity was not among the commendable comestibles for the female half of the population. Cannibalism for women was taboo.

High on the hillside, mostly hidden in dense shrubbery, were platforms of dry Cyclopean masonry, the paepaes of old days. Just over against the great stone seats on which the chiefs were said to sit to witness human sacrifice was another paepae, perhaps forty feet square, and in it the shallow depression in which the victims were laid to be killed.

Assault-and-Battery very obligingly took the part of a victim and laid himself down in it to show how the thing was done. I regret to report, however, that Battle-and-Murder did not do the imitation killing, as the dramatic unities would seem to require. Somebody else played executioner, while old B. & M. looked on without a smile. He might have been a model of the Expert Criticising the Amateur.

Filling up the ship again with fresh vegetables and fruits was necessary and important at our first landing place in the Marquesas, and we were promised that bananas, breadfruit, and coconuts would cost us nothing. Except for coconuts, they were as scarce as they were cheap. A few delicious vegetables, such as tomatoes, string beans, sweet corn, celery, eggplant, cucumbers, cabbage, onions, and beets were given to us by the leader of the Czechoslovakian settlement in Hiva Oa. Chickens, however, were in another class, at a dollar apiece. We had to pay forty-five cents a kilogram for porkers on the hoof. Common labor came to $3.00 and $3.50 a day and dry goods were dear—$1.25 for an undershirt.

The ship's physician was, of course, keen to visit the leper colony and C. B., Cleaves, and I went with him. It was a three-mile walk to the wire fencing that shuts these involuntary recluses from the world.

The colony consists of a small group of houses, closely placed together, a church, and a little cemetery. When we first came in sight, two or three of the leper women hustled to pick up some branches which were lying on the ground—evidently because the place is required to be kept in excellent order. The houses were clean and freshly painted so far as we could see, and the whole place had the appearance of being well administered.

The lepers, twenty-eight of them, including, most pitifully, a number of children from eight to fourteen years of age, gathered around at the invitation of their Chief. We were the first strangers they had seen in three years.

They seemed extremely cheerful, laughing and joking together and apparently but little depressed by their condition. Our whole visit was a sort of fête to them, and they gathered against the fence, submitted to being photographed in entire good will, and on the whole acted as if they were thoroughly glad to see us.

The Chief speaks English—to some extent. When he first caught sight of C. B., in regular seaman's outfit, he was evidently puzzled. Then he asked me, "That girl?" I nodded. Whereupon, with a broad grin, he shouted at her, "All right, good-by!"

Three of the men had each lost an eye; one woman had elephantiasis; one man had lost all the toes from one foot and most of them from another; the faces of several were spotted and swollen.

I handed the Chief some packages of cigarettes, which he promptly distributed among the others. Then as we left he yelled to me, "Good man, Governor! Good-by!"

We had gotten thoroughly soaked on the way to the lepers and it rained hard after we left. So we took refuge on the near-by porch of a native hut. In a few minutes the woman who lived there came up riding on a pony, with a small girl sitting behind her. She had a bundle of fuel in the shape of coconut-leaf stems across her saddle.

When she saw us she smiled all over her face, took her horse under a shed, offsaddled, gave the horse some breadfruits, and sat down where she was and smoked until we were ready to leave. Perhaps it was not South Sea etiquette for her to venture uninvited where there were men or other distinguished people.

In the South Seas, where chairs are few, woman's place is on the floor. In this case, the lady of the house did not even venture to come home while we were there, but she registered pleasure all the same at the honor of our visit.

The views from the trail out to Hanake Island and across the bay to the great headland of Teaehoa were magnificent. A huge surf was breaking on the rugged coast and almost under our feet a great Sea Turtle lifted his head out of its seaward edge.

Another day C. B. and I set out to call upon Bishop LeCadre, whose reputation in the island is very high. First we looked into the spotlessly clean Cathedral, which is about the size of an average Methodist church at home, and then we ran across two sisters. After they had greeted me cordially and shaken hands, one of them looked at C. B. in her dungarees and exclaimed, "Look, it's a woman!" Her unfamiliarity with modern feminine appropriation of the garments of the male was explained when it appeared that she had been forty-four years on the islands without ever going home.

The staff of the school for girls at Atuona consists of four sisters and the Bishop. There have been as many as seventy-eight girls in the school at one time. Now there are only forty-six—a significant commentary on the continuous depopulation of the Marquesas.

The girls are taken from their parents at the age of six, with or without the latter's consent. Up to ten years old they have an annual vacation. After that they do not leave the school at all until they leave it for good at fifteen, when they are old enough to be married. According to the Bishop it is necessary to keep his sub-débutantes under strict confinement.

The Bishop himself is a round-headed, exceedingly capable and French-looking Frenchman, with a long gray beard. Both C. B. and I were greatly impressed with his strength of personality, his tolerance, and his breadth of view. He had been thirty years on the islands with only one return to France.

He explained that, notwithstanding the financial aid he received from the Society for the Propagation of the Faith and from the French Government, it was very difficult for him to raise the necessary funds, all necessities of life being excessively high. Twenty-two kilograms of rice, for example, cost forty-five francs and only lasted a single day for the whole school. He complained that since living was so easy for the natives they did not care to work, and he added that the descendants of any frugal hard-working people who might settle in the island would undoubtedly fall into the same habits.

One morning I left the Professor and A. K. to their scientific devices and went fishing with Giff, Bourget, and Bud. We went around Hanake Island, where I got a very small Little Tunny. Then in Tahu Uku Bay Giff caught on his spoon a small Amberjack, and a Crevalle very much the same as those we caught at Cocos except that the color was nothing like so blue. It was poor fishing. On Hanake we saw the wild goats, as we had seen them with the glass from the schooner, and all around the bay the coconut plantations.

As we circled the great Bay of Traitors that morning, the mountain back of Atuona, with its cliffs and its colossal contours, was magnificent, crowned with cloud in the clear sunlight. The great shadows which played across its face added to its vast impressiveness.

While we were fishing, the trading schooner *Gisborne* came into the bay with the new Administrator of the Islands, Doctor Rollin, aboard. I hailed the *Mary*, had her hoist the French flag and dip our ensign, and then went aboard the *Gisborne* and had a very pleasant talk with the Administrator.

Doctor Louis Rollin is a physician of great energy and force of character, highly intelligent, obviously well read, liberal in his views, and perfectly unafraid. He has five citations for gallantry under fire in the Great War, and he would be distinguished in any company.

Knowing the Marquesan problem thoroughly from five years' residence, he has not only written a good book, *Les Isles Marquises*, about his islands, but he is exceptionally well fitted to be administrator. Moreover, he has a strong sympathetic liking for the Marquesans.

After Rollin's return Nordmann gave us a native lunch at his house. The meal consisted, first, of raw fish with a sauce of coconut milk and lemon—very delicious. It was served with boiled breadfruit, which is certainly well named. Then came a sort of thick

Louis Rollin, administrator of the Marquesas, was fearless, wise, and strong

The boys go swimming in Paradise

Father Simeon Delmas, the first authority on Marquesan customs

The last of the woodcarvers at Taipi

preserve, tough to chew but very good. Afterwards, boiled pork cooked with the skin on, and with it popoi made of breadfruit which is allowed to ferment in vats in the ground for months before it is used. This popoi was a sticky yellowish compound, slightly sour in taste, and by no means bad. Like the pork, it was eaten with coconut milk sauce.

Then came a sort of salad of boiled shrimps, and after that preserved Malaga grapes from California, and Marquesan coffee. The latter had a delicious bitter taste, and we all liked it immensely.

Doctor Rollin was a flowing spring of information. He told us, for instance, how the native passion for tattooing is now held in restraint by law because it spreads infection. In the matter of drink, strict prohibition is enforced for the natives, but the white people are a law unto themselves.

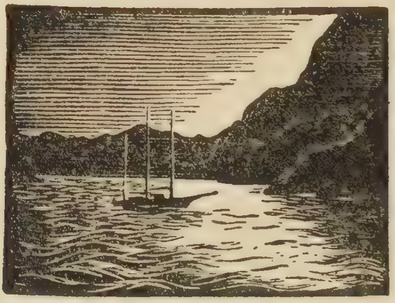
The island's major problem, depopulation, of course interested Doctor Rollin greatly. Two centuries ago there were said to be 100,000 people in these islands. When Admiral Dupetit Thouars took possession of the Marquesas for France in 1842, an actual census set the population at 52,000. Ten years ago it had dwindled to 3,000 or less, and today there are only 1,800. The Marquesans are dying off like flies.

While we were at the table the evening before we left for Fatu Hiva, Nordmann's dangerous island, lights began to appear over the bay. They were torches of coconut leaves propped up forward in small canoes, in which one man paddled and another handled a dip net. They were catching small fish for bait. A striking picture in the dark before moonrise.

As we left the island of Hiva Oa next morning the great square peak of Temiti behind the town rose from its precipices and towered glorious in the sunrise. It was entirely bare of clouds when the light first struck it.

But not for long. Clouds began to gather around the peak and here and there showers fell across the steeps. Over the neighboring island of Tahu Ata, less high but even more rugged than Hiva Oa, a rainbow of extraordinary brilliancy and vividness suddenly appeared. Its bands of misty color grew swiftly in height and reach until, almost before we knew it, it had bridged the two-mile gap between the islands and rested with a foot on either one.

We watched it spellbound. It was the sight of a lifetime. Two such islands joined by such a bridge made a vision of glory for which I have no words. Then it died away, and somehow left us breathless and quiet.



XVIII

THE BAY OF VIRGINS

WE sailed at dawn, the hour when the land breeze has its greatest strength, and three hours later sighted Fatu Hiva, some twenty miles away. High and very steep, incomparably bold, serrated, precipitous, and unimaginably green—the appearance of the island was breath-taking.

The little bay for which we were bound, a mere wrinkle in the coast line on the map, is gorgeous to the point of unreality.

Indeed, most of the Marquesas Islands are far beyond all common experience. They bring irresistibly to mind the most theatrical efforts of the least restrained scene painters. They are beautiful with vividness, extravagance, and unexpectedness in form and in color.

Centuries ago, Spanish explorers sailed into a bay on the west side of Fatu Hiva, past the tremendous ridge that falls a thousand feet and breaks into enormous pinnacles at the water's edge. The Spaniards called it the Bay of Virgins, not for an earthly but for a heavenly reason. They gave the bay its name not because of the swarms of young girls who doubtless swam out to welcome them (Marquesan women of those days had to swim because they must never touch canoes), but because huge rounded pinnacles of volcanic rock about its shores looked to them like cloaked and hooded figures of the Virgin Mary enshrined for worship.

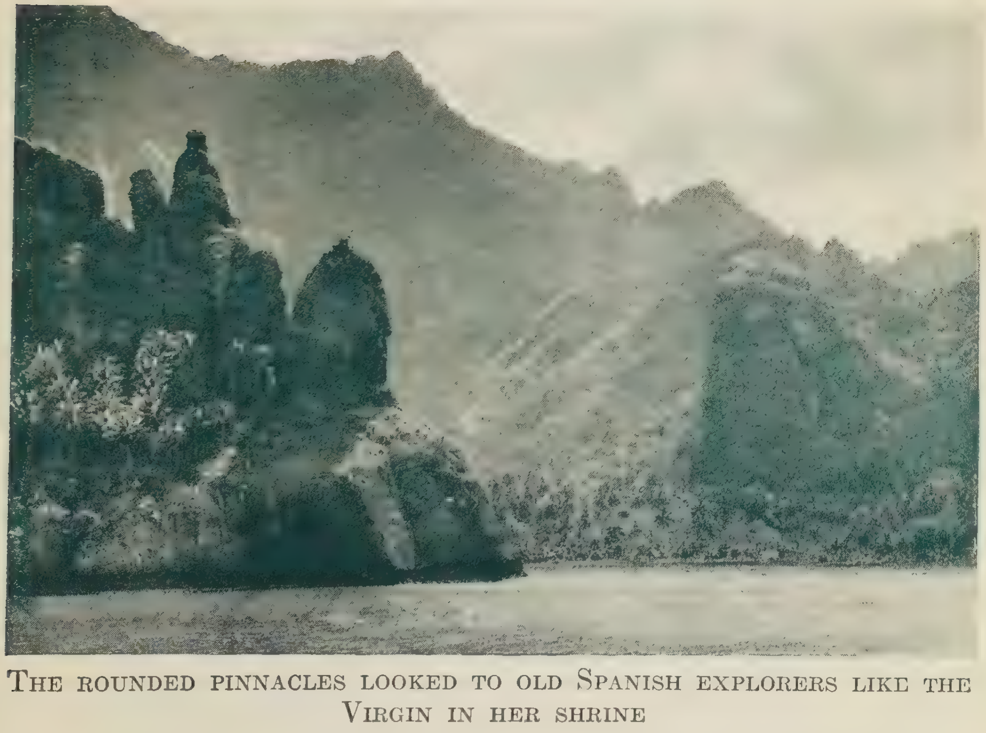
These tremendous natural simulacra are many. They are scattered on the margin of the bay and in still more colossal magnitudes for half a mile beyond. It takes but an instant of time to recognize these Titanic figures. They dominate the nearer scene, and they look the part their name assigns them.

On the right, a great promontory is pierced by a passage through and through. Behind the village, to the left, sierra after sierra cuts the sky with fantastic patterns 2,500 feet above.

The Bay of Virgins (or of Hana Vave) is a little bay. It is far narrower than the hills which rise straight up from the water's edge are high. The whole scale and contour of the place are so exceptional that when we had dropped anchor well within the headlands in eleven fathoms and I asked our captain how far we were from the shore that seemed within a biscuit's toss on either side, he frankly said he couldn't tell.

At the head of the little bay lies a steep and difficult beach of black lava boulders against which breaks a surf heavy enough to require care in landing, and back of that, the little village of Hana Vave, set in its groves of coconuts like other Marquesan villages.

Like the most theatrical efforts of the least restrained scene painters



The rounded pinnacles looked to old Spanish explorers like the Virgin in her shrine

THE *MARY PINCHOT* AT ANCHOR OFF THE SAFEST "DANGEROUS ISLAND" IN ALL THE SEVEN SEAS

Seen from the bay, Hana Vave village was so dwarfed by its surroundings that it was hard to make it out at all. The scale of the Virgins and the mountain mass behind them dwarfed what houses we could see until they looked no bigger than shoe boxes, and the palms above them like asparagus plants with curiously thickened leaves. It was a landscape in which the habitations of men seemed singularly tiny and out of place.

They are simple, kindly, honest, and most hospitable, these Marquesan people, who have had to give up their old life, their old habits, amusements, customs (many of which were worthy to be preserved) under the pressure of a more vigorous race, and instead, except for the one great blessing of Christianity, have gained little enough. Civilization has given them clothes and disease, kerosene and canned goods, and in return has taken away their ancient joy of life.

At present the Marquesan people are perishing—victims, first of all, of white men's sicknesses; then of white men's domination, which has destroyed their pride of race; and, finally, of the loss of interest in a life that has become stale, flat, and unprofitable.

At this village and at Omoa, with not over 200 people between them, our surgeon made forty visits in five days, and would have been kept busy for a month, could we have stayed, before even the most obvious and pressing medical needs could be met.

The much tattooed headman met us on the beach, greeted us cordially, as all the others did, and talked with us in fair French. He had elephantiasis in one leg, and was tattooed to the knees. Another man wearing a pareu had worse elephantiasis and was tattooed far above the knees, as was an old fellow who could speak no French but seemed to be the forceful character in the village.

There were a few women on the beach, and more at houses in the village. They, however, showed little concern about our advent but went quietly on with their household occupations. It is a point of etiquette in these western islands not to appear too much interested in strangers, just as it used to be a point of etiquette in our own West not to ask strangers questions.

We established our position with the natives of Hana Vave with precision and dispatch. The anchor was hardly down before we brought ashore the two highly expensive pigs that had come with us as passengers from Hiva Oa. And when they had been slaughtered on the beach we contributed their heads, hearts, livers, and other less desirable organs to the people of the village, who were genuinely glad to get them. Meat is not often on their bill of fare.

French colonial administration, like that of other nations, may leave some things to be desired. But one thing whose value is incontestable the French have done for the Marquesans. They have built trails. As we entered the Bay of Virgins and were recovering a little from what was almost the physical shock of its prodigious beauty, some of us noticed, high on a hill so steep that it amounted to a grass-clad precipice, the zigzag of a trail climbing almost vertically above us, where it seemed as if no trail could possibly climb.

We walked through the village along its narrow rock-bordered single street, lined at intervals with neat little houses raised on posts, and shaded throughout with coconut palms and breadfruit trees; passed the little Catholic church, boarded and painted and steepled; passed the diminutive Protestant church, with its coconut-leaf walls and coconut-leaf roof, and no steeple at all; passed the house of the Chief's father-in-law, where two were sick; passed the house where a victim of tuberculosis lay dying; passed the houses of many other sufferers; crossed on stepping stones the Hana Vave stream of gloriously clear water; crossed a tributary brook over a bridge built by the French; passed stone Virgins, too colossal to be recognizable near by; and then on through the gorge beyond the town into the wider valley above, with its thousands of coconut trees; through a little strip of dense damp virgin forest; and out on to the open grasslands we had seen so plainly from the ship.

Then we began to climb, and as we climbed the great pillars and faces of volcanic rock began to take on their huge true values.

Directly underneath us was the village, but as completely hidden as the street below from a man who looks through the glass of a skyscraper window.

To our left lay a little slice of harbor, its luminous water changing from green to blue as the depth increased. The ship was still concealed by the steepness of the hill.

In front of us and to the right lay the great valley, shut in by a noble rampart two thousand feet in height, up to which rose slopes too precipitous for even the avid vegetation of the tropics.

Directly below us stood out the great pillars of the more inland Virgins, the head of one of which, by an irony almost too great to be an accident, was changed at this height into a perfect reproduction of the head of that representative Protestant, William E. Gladstone, as drawn a thousand times in the London *Punch.* It was just the note of comic relief needed to humanize a landscape otherwise too impressive to be assimilated.

To the right, over against the harbor, the bounding ridge rose in a saw-toothed arête so thin and sharp that a hundred feet below the top it was pierced through from side to side by an opening which showed to us as a large and vivid spot of light.

It seemed impossible, but there was no disputing it. Even among these islands, where one may see half a dozen natural bridges in half a dozen miles, this was beyond expectation—the sort of thing which happens but once in an outdoor man's life. We saw it and looked through it later from the other side as our schooner sailed around the island on the way back to Hiva Oa.

Solid comfort at Hana Vave

THE UA HUKA PIROGUES WERE GREAT SAIL CARRIERS

Forest fires control vegetation on Fatu Hiva as they do in Colorado

Titanic wildness flown over by white birds

Here and there below us was the tiny hut of a copra-maker, and everywhere throughout the less precipitous floor of the valley great groves of tall and slender coconuts, from which he took the raw material of his living.

High on one slope lay an outcrop of bare brown lava with the faintest trace of a trail running across it. Another slope, so far below that it looked nearly level, had been burned off by the escape of one of the fires copra-makers are constantly lighting to dispose of the rubbish which otherwise would make their work impossible. When a leaf, like that of the coconut palm, is fifteen or twenty feet long, six or eight feet wide, and weighs tens of pounds, it takes but a few of them to clutter up the ground.

As we sat drinking in the immeasurable beauty of the great bowl down into which we looked, carved and colored and filled with atmosphere, further details began to emerge. Here the smoke of a copra-maker's fire, there a bit of clearing, and finally white birds.

White birds soaring across the faces of the cliffs, some easily seen, some at what seemed an infinite distance, sailing, swooping, diving in what seemed like flying for the mere delight of being on the wing. We saw one fall in a great curving sweep that must have spanned a thousand feet, and we thought that these white birds added the supreme and final touch of beauty, grace, and life. Titanic wildness and sylvan peace, flown over by white birds.

After a while we saw that the birds were not Fairy Terns but Tropic Birds—around which cluster more romance and story than any others in these seas, except the Albatross itself.

Then it was time to go on up again over the well-built trail in pursuit of the fugitive top. As every mountain climber will understand, time and again we saw ahead of us the point that was obviously the very summit; and time and again, when we reached it, there lay another higher summit beyond.

As we rounded one of these alluring but mendacious corners, there shone before us the great slender waterfall without which no valley in these islands is altogether perfect. This one hung in mid-valley, hundreds of feet in height, giving grace to the precipice over which it fell and set off by the dark gigantic cloud-capped peak behind it.

We tried to talk about it; we tried to photograph it; we failed in both; but we have seen it, and we can never forget it.

Finally we tore ourselves away from the intimate and yet prodigious sweep and beauty of the valley and began to consider nearer things. We found ourselves in a topography of rounded minor ridges and little canyons, so steeply cut that forty-five degrees was a very moderate gradient among them. They were covered with a smooth gray-brown velvet of little ferns, like the familiar maidenhair in stem and leaf, as accurately uniform in height as if they had been clipped.

They made the ridges seem as strokable as the fur of a kitten and just as flowing in outline.

At home grass-clad and fern-clad slopes such as we had been walking through for hours would have meant but one thing, and here they meant it also—fire. It was amazing and incredible in this tropic island, where rains were constantly drawn like curtains across the precipices and over the sea, but it was true. The vegetation of the interior of Fatu Hiva was as definitely conditioned and controlled by forest fires as in any mountain park in Colorado.

We noticed first that the ferns themselves had been burned off in little patches along the trail. Then in wet places in the bottoms of steep little valleys appeared small pockets of the original forest, just as a thousand times at home I had seen similar pockets survive in similar places when the fires had taken all the rest.

Then came stretches of burned trees, Pandanus palms and others whose relationships I could not even guess, silvering many a ridge with their bleached branches and showing the unmistakable marks of fire nearer the ground.

We were still discussing the power and the ubiquity of forest fires when out of the corner of my eye I picked up two Marquesans on horseback rounding a bend in the trail. Here was a chance to learn the distance to Omoa, the village south of Hana Vave to which the trail we were traveling ultimately led.

They were two youngsters with wreaths about their hats, and the horses they rode were good. One of them spoke little or no French; the other rather less. I asked the linguist how far we were in kilometers from Omoa, from which village they had just come. The question floored him completely. Then I changed to the simpler measure of hours.

Hours he could wrestle with. At first he said his village was one hour away. Then he reconsidered and made it three hours. Finally he settled down to split the difference and call it two.

It was still only the middle of the day, and on the two-hour basis we could reach Omoa easily by mid-afternoon. So Prof and I decided to go on, and I wrote a note to Captain Brown, which the young man agreed to deliver, asking him to have the launch meet us at Omoa about four o'clock.

Then it occurred to me to check this Fatu Hivan estimate of distance by asking how far we were from Hana Vave. With great promptness the linguist declared we could make it in one hour.

That upset our apple-cart completely. It had taken us three hours of hard walking to get where we were. So the note to the Captain went back into my pocket, and we determined to choose the evils of the long trail back to Hana Vave rather than fly to others that we knew not of.

When the young men had departed, obviously much puzzled as to what could induce two gray-beard Ameri-

Boat shelters on the beach at Cmoa

Great fruiting mangoes line Main Street

Attraction and repulsion in the South Seas

The boys sailed the lifeboat whenever they had a chance

In this marvel of tropic peace the Shark bit the Tuna in two cans to labor up these hills afoot, Prof and I pushed on to the next corner ahead. From it we hoped to see Omoa and the great cliff which bounds it to the south, and at last we came to where we could look down into the Valley of Omoa, scarcely less superb than that of Hana Vave.

Directly in front of us the lofty peak lay hidden in clouds. Beyond the village the great pinnacled cliff rose straight up from the sea, with the huge swell of the Pacific breaking at its foot. We had seen it from the water, and we knew that across the face of it swung Frigate Birds, Boobies, Tropic Birds, and the delicate white Fairy Terns—the most characteristic flying things of the high islands of Polynesia.

The sunset was nothing less than violent, as sunsets in the tropics often are. Hidden behind masses of dark cloud the sun glared, like a burning eye, out of a narrow crevice, and above and beneath the cloud wrack drove great fanlike beams of light, blue upward and yellow downward, to the zenith and the ocean. We watched the sun, which sets at home in temperate quietness, go down amid the semblance of a vast explosion.

When we turned our backs to the sunset for a moment and looked eastward, the illumination of the titanic rampant which towered about the Valley of Hana Vave was unforgetable. It was almost impossible to leave the contemplation of it long enough to watch our footing and keep from stumbling down one of the grassy slopes, so steep that there would have been no chance whatever for the most active man to stop himself, once started.

On the walk back the setting sun shot its level rays against precipice and rampart and glorified them. It changed the brown fern velvet on the nearer ridges into the warmest russet until they glowed like polished carnelians. It made one wish one might grow large enough to pass one's hand over them, as one loves to handle the smooth surfaces of rounded jades.

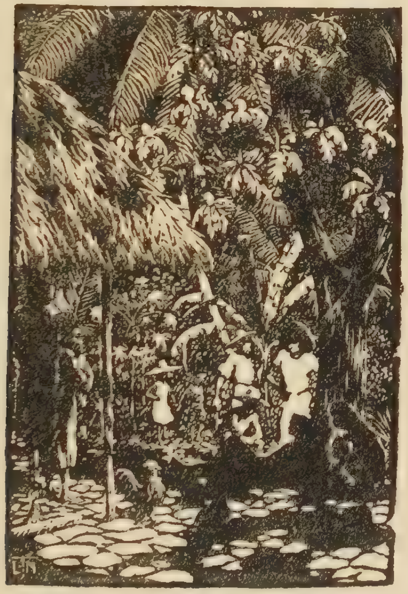
The sea, clear of all vapor, was misty and mysterious with the white reflections of the trade-wind clouds, which gave it a depth and distance no sharp horizon can ever show.

Although the dark in the tropics comes with many gradual steps and by no means at one stride, *The Ancient Mariner* to the contrary notwithstanding, before long the light began to fade and darkness was almost on us.

We pushed on as rapidly as possible, finding, as many other travelers have found, that miles passed over easily on starting were much harder for tired men to travel going back. At length we sighted the Bay of Virgins. And then we came to Gladstone's head. The failing light had not only left the likeness as striking as before, but had perfected and completed the resemblance by adding the perfect counterfeit presentment of the Great Commoner's inevitable white flaring stand-up collar.

At length we reached the coconuts. At length we passed the bridge, slipped through the darkened village, and could just see the outline of the skiff that was waiting for us out beyond the surf.

A day of days—rather a day of years, of lives. Titanic wildness and sylvan peace, flown over by white birds.



XIX

THE DANGEROUS ISLAND

TO the Fatu Hivans we were what the circus parade is to the country town—a great big break in the monotony of daily life. We ourselves, and pretty much everything we had on board, were strange and new. They had never seen a ship like ours. Many of them had never seen ice, and those in whose hands we put it dropped it as if it had been hot instead of cold.

One old man was so frightened by a piece handed to him in the saloon that he threw it down, dashed through the passage, up the companionway, and over the rail into his canoe, which he promptly paddled a couple of hundred yards away, meantime talking to himself nineteen to the dozen.

The electric light was marvelous to our guests, and they never tired of watching us turn on and off the electric fans, and feeling the breeze they made. The wireless apparatus was a mystery and every cabin filled with curious things.

Regularly after breakfast the visitors would begin to come. On the day we went to Omoa, only four miles away by sea from Hana Vave, our departure, while actually made in order to visit Father Olivier, a personality of the islands, took on the nature of a flight. Numerous canoes from that very village, bringing men, women, and children in formidable numbers, were seen approaching. If they caught us aboard, we should have to spend the morning showing them the ship and giving them presents of fishhooks and tobacco, as we already had to our Hana Vave friends.

The west side of Fatu Hiva, down which we passed, is almost a wonder of the world. North of our anchorage seven great promontories march down to the shore and fall in precipices to the sea, with enchanting valleys between, deep cut and wild and steep. Still farther to the north the coast changes into great cliffs and caves and then into greater cliffs and greater caves, massive and tremendous, until the point of the island is reached. Where the great rollers thundered into two huge caverns there was a blowing rock which shot its spray forty or fifty feet into the air and roared like a thousand Sea Lions, and all along the western coast of Fatu Hiva were many more blowing rocks.

Between Hana Vave and Omoa seven other promontories exceed the glory of their northern neighbors, and one valley between two of them remains to all of us the perfect embodiment of the tropics. It reached the water in a bay so deeply hidden behind vertical rocks that the great Pacific roll scarcely reached its beach, in the center of which a huge black boulder of lava made a natural quay.

Behind the beach stood a little native hut, more than half hidden in a grove of coconuts; and still farther behind the sides of the valley, a mere cleft in the mountains, soared upward, like walls, to the distant sky. We have no picture that does this valley justice, and I think none ever could.

The cliffs and cirques at the northern end were balanced to the south by a thousand-foot cliff with two great seams athwart its face which made an oblique cross of seven or eight hundred feet, and after that by more cliffs and cirques, with here and there an acre or two of cyclopean pavement set on edge.

The whole of this vast scenery is given scale and value by the birds which wheel and swoop and plane about it. Far above the highest summits float and soar the Frigate Birds on falcate wings, as supernal and detached as if heaven were their home.

But that very day we saw them chasing the industrious Boobies and forcing them to give up their hard-earned fish, and even stealing from a little Noddy Tern. Someone in the launch remarked, "If I had a beak like a Booby I would make any Frigate Bird climb a tree that tried to take away my fish."

Below the Frigates fly the Tropic Birds and Fairy Terns, drawing white lines across the cliffs, and giving the great rock walls a certain tenderness. Once, as we were passing, a Tropic Bird flew out of a huge sea cave where she had evidently made her nest. If her children keep their hearing in that turmoil she will be lucky.

The only places on the western coast of Fatu Hiva which are shallow enough to permit great lines of surf are near the cliffs at the northern and the southern ends. From these rollers, great roaring crests of foam, goes out a sense of fearful power as they drag behind them their clouds of spray and break on the beach with a bellow we could hear from far at sea.

In the center of the long line to the north stood a boulder the size of a small house, over which the greater waves smashed in superb eruptions of spray. The smooth backs of the breakers shone with the changing colors of rich watered silk, while the reflections in the polished mirror of the combers from the somber cliffs, the green trees, and the yellow grass of the steep slopes, were concentrated and transformed into deep purples, vivid reds, brilliant blues, with every shade of tawny and lighter yellow flashing and intermingling on the changing surface of the sea.

There was a tremendous fascination in riding the great rollers in the launch within a biscuit toss of the shore, balancing on the vast surge and fall, and watching the long white cascades pouring from the hidden tide pools on wave-cut shelves of black lava rock—pouring out until the next wave filled them, to be emptied and refilled again, world without end.

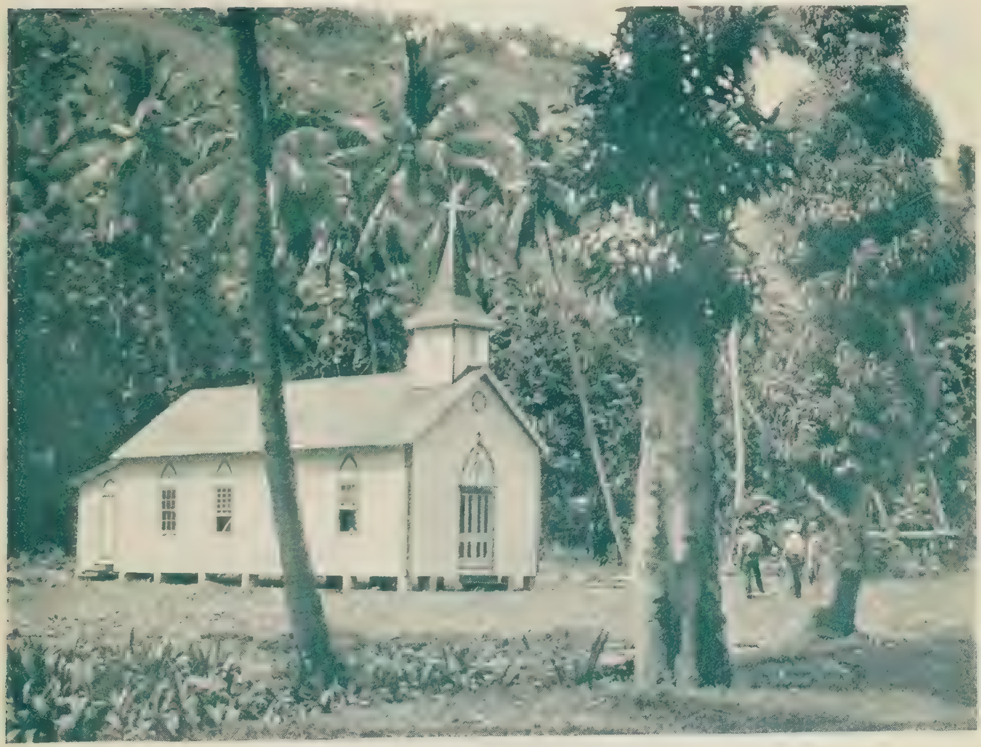
On the way to Omoa we fished—we always did. We had poor luck, and so ran on beyond the little town, for we were unwilling to present ourselves to Father Olivier with empty hands. Just past the Bay of Bon Repos, in whose hollow Omoa lies, I got my first strike, and fought and landed a Crevalle, whose native name is Tehana, of about thirty pounds. Then we started for the shore.

The landing place in Omoa Bay has far from a promising appearance. The *Coast Pilot* warns against it, and the great breakers smashing on the steep rough boulder beach are uncommonly discouraging. But long smooths occur at this landing during which the waves are quiet, and it is perfectly easy to get ashore—provided you hit the right minute. If, however, a skiff were caught by the big breakers which come three or more at a time, it would be broken into kindling wood. The wash from them dragged the boulders down the sloping shore until they cracked like machine guns in action.

As we came up from the beach, down under the fine avenue of fruiting mangoes which ran through the village came walking the portly benignant figure of Father Olivier. He welcomed us most politely, but his long solitary years among the natives showed in the embarrassment which seemed to underlie his cordiality. I gave him the Crevalle, which two natives carried in from the landing on a pole, and that helped matters along.

With Father Olivier we walked on through the village, while the aged Father of a vanishing flock told us there were eight hundred people on the island when he came here forty-four years before, of whom now but

Father Olivier had not been home to France for forty-four years



Father Olivier's church at Omoa

A fish for Father Olivier

Youth pursues science

two hundred remain. With us came the native police force in the shape of a fine looking six-footer, who later took Doctor Mathewson to the houses of the many sick.

Says Doctor Mathewson concerning sickness on Fatu Hiva:

> "On this island twenty per cent of the population were treated. More than half the cases were of a contagious nature. None of these patients had received previous medical treatment—as on most of the islands visited one or two years had elapsed since the last visit of a doctor. The patients not only sought aid voluntarily but accepted advice word for word like nuggets of gold.
>
> "'Does eating popoi bring on tuberculosis?' 'Is raw fish harmful to my little girl?' are examples of the islanders' innocent desire to learn. And when some of the wonders of sunlight were explained, they were more than interested in just how long and what time of day the sunlight treatment was most efficacious against tuberculosis. Elephantiasis and tuberculosis led among the diseases encountered and there are a great many ocular defects, largely owing to the ignorance of the treatment of the eyes of the newly born.
>
> "Of course the treatment given necessarily consisted mainly of palliative measures and advice. For example, one young man was dying from advanced pulmonary tuberculosis. His father, brother, and sister had previously succumbed to the same disease and yet no precautions had been observed to prevent infection. Even small children lived and played under the same roof with the sick man.
>
> "It is characteristic of these people to gather the sick and unfortunate into the most comfortable

> dwelling, where all contribute to their welfare. This, of course, is neither good for the patient or patron, but, given the complete lack of sanitary knowledge that prevails, primitive instinct and loyalty to one another are the guiding forces. There is no doubt of their great need.
>
> "Birth injuries are fairly common and infant mortality is extremely high."

The medical side of our expedition was necessarily more or less incidental. Had time allowed, a much greater number of cases would have been treated. Certainly never have I known medical services to be more appreciated.

Father Olivier evidently held his bronzed and somewhat weary flock in strong affection, deploring the while their besetting sin, to wit, the love of pleasure. "Il faut avoir pitié de la nature humaine," said the wise old priest, whose own heart was full of pity.

With C. B., Father Olivier regretted that the ancient knowledge of carving in wood and stone was dying or had died. The tikis which the traveler now finds are poor things made for the trade, and the artists whose work survives in the museum at Tahiti are long since dead and their skill is buried with them.

We stopped first at the house of a little Spaniard named Joey, a mere scrap of a man, with a native wife and seven very pretty children. Joey deserted from a whaler years ago, was recaptured and escaped again, and has since lived in this island paradise with his family growing up around him.

But the days of Joey's youth have not lost their hold on him, and tears overflowed his eyes when he spoke of his vanished hope of seeing Spain again. That, however, was not the worst of it. Although Joey does not know it, the chances are that before long he will not even see his present home, for both his eyes have cataracts, and there is no doctor in these islands who can help him.

As we came home that evening in the sunset, while the launch was moving slowly in the still water between two great promontories whose cliffs and columns rose straight from the sea, and opposite that most glorious of little tropic valleys which held the whole of our attention, the Chief Engineer and I each got a smashing strike. Never before had a Tuna struck the lampwick bait when it had so little motion. The Chief's fish got away, but mine, after a swift ding-dong fight, came to the boat. As it ranged alongside, close enough to touch it with my hand, a seven-foot Shark swam calmly up, engulfed its hinder half, and bit it off. It was a most insolent and competent performance.

Bud promptly gaffed the Shark, whose head seemed no broader than the Tuna's middle. It twisted off, and then, instead of disappearing as a pricked fish should, it hung about in the obvious hope of getting the rest of the Tuna, the whole of which would have weighed about fifty pounds, or half as much as the Shark.

A little later another one, an Allison's Tuna like the first, after taking out 250 yards of line in a swift magnificent rush, came to gaff where no Sharks were. It was gloriously colored, and the two long dorsal and anal fins glowed, like the sunset we had been watching, with brilliant yellow and gold.

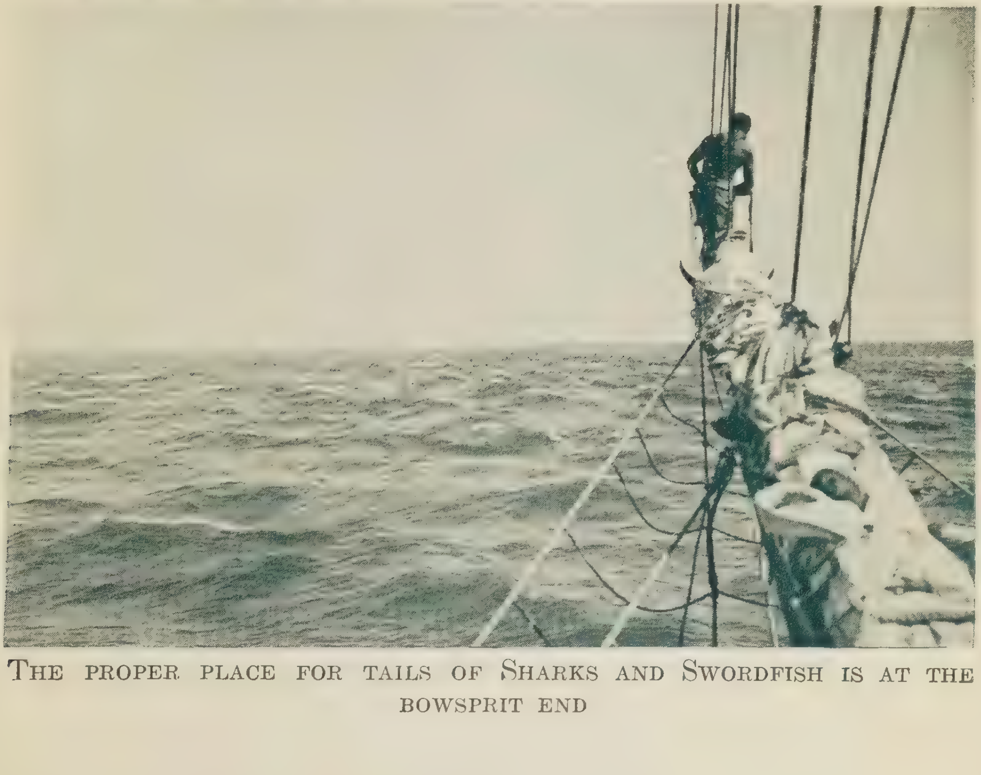
After supper Otis came hurrying to tell us that a dance in honor of the whole ship's company was being held on shore. So we landed and walked up the village road in the moonlight. Most of the crew were sitting on a stone wall on one side of the road; most of the village were sitting on the ground on the other side of the road, and the dancers were in two rows in between.

In the standing-up dance the men took their places on one side of the road in single file, six of them; and the women, three or four feet away, in a corresponding file, six of them also—all facing the leader, who himself did not dance but issued long directions—almost orations—before each figure.

The arms of men and women alike played a very large part, and the arm motions, especially those of the women, were graceful in the extreme. There was nothing objectionable in the dance, and the Marquesans evidently took the greatest delight in it. It went on almost interminably.

In addition to the standing dance, whose most striking figure was a sort of walk-around, first by the women and then by the men, distantly like a Virginia reel, there was also the sitting dance, which was far the more attractive of the two, partly for its own sake and partly because of the singing.

Cliffs at Eiao look like gigantic walls



The proper place for tails of Sharks and Swordfish is at the bowsprit end

A COCONUT GROVE ON FAKARAVA LAGOON

A MODERN SHIRT AND ANCIENT TROUSERS

In this the men and women sit on the ground on leaves or pieces of cloth, the women with their heels against their thighs, the men most often cross-legged. Then, facing the leader, they sway from side to side in two lines as before, and a monotonous and very pleasing song goes on continuously throughout each figure.

There was no drum beating for the sitting dance, whereas for the standing dance the lively little policeman of the settlement beat very skilfully with a couple of whatever sticks came handy on an empty five-gallon kerosene can.

Cleaves had brought with him six flares. Two at a time he put them in the hands of Giff and Stiff on opposite sides of the road while he photographed the dance. Meanwhile the chief explained to the Marquesans in several more or less bibulous and passionate orations just what was going to happen, and when the flares were lit, with admirable self-control they kept right on dancing.

On the veranda of a tin-roofed board-built house just behind the Marquesan part of the audience stood a smoky stable lantern. It was the only competition with the moon, which was almost full. In its light every coconut tree in the village was turned to silver and black enamel. The great palm fronds were huge curved gleaming scimitars. Except for one thing, here were the tropics of Stevenson to the life. The only discordant note was the fact that every Marquesan wore our ugly European clothes.

C. B. had a chair out in the middle of the road facing the dancers, and was clearly the guest of honor. She had brought with her some packets of cigarettes and some marshmallows, and we passed them around among our native friends till they were gone.

The chief, who had been assuring me all the evening of his alcoholic but undying affection, and who seemed to be cordially hated by all of his own people, now suggested that it would be a good plan to give cakes to each of the dancers. But at the instigation of C. B., I invited the whole village to come aboard the schooner the following night and get their presents then.

At length our friends danced their thanks to us in several different figures, and we went out through the surf and back to the ship, leaving behind us the definite understanding that on the evening of tomorrow, Tuesday, September Seventeen, Mr. and Mrs. Pinchot would be at home.

And this was Nordmann's dangerous island.

XX

MR. AND MRS. PINCHOT AT HOME

IN the Marquesas Islands the way to receive is not to ask but to give.

Stiff, for example, would go ashore with his pockets full of old neckties or whatever knick-knacks he had to spare, make friends with a native and give him a present. Then he would proceed to give another present to another native, and repeat.

Before very long the giver would become the receiver. Those to whom he had made presents brought him presents again, often out of all proportion to the value of the original gift. He would come back to the ship with his hands full of pearl shell, bonito hooks, stone axes, and popoi pounders, to the furious envy of all beholders. It was Stiff who became the owner of that rare trophy of the Marquesas—a genuine dead man's beard—a finer beard by far than we saw on any living man.

Among the Polynesians whom we saw, the giving of gifts was a matter for great consideration. And on our part we had to know what products of civilization were necessary or desirable in their eyes. It was plain enough, for example, that fishhooks would be welcome, for they live largely on fish; and it took no power of prophecy to foretell that the hooks the traders sell them are cheap goods at high prices. And a knife is always useful to an outdoor man.

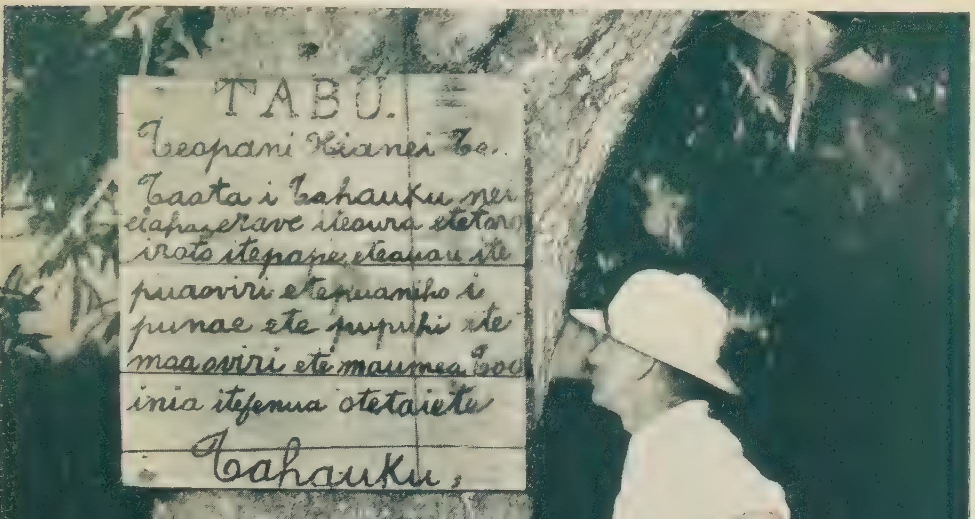
But it never would have entered my mind that the things the natives wanted most were the heavy woolen peajackets of the crew. Coats of any kind and shirts and trousers they hungered for even more than for beads or canned goods, although Boston baked beans were always in demand.

As we saw them, Polynesians are the most courteous of people. With them, as with the Chinese, honesty is so fully taken for granted that they will give or send you anything you fancy, to be paid for at your pleasure. And they were as honest toward us as they expected us to be honest toward them. Many were the times when the islanders refused absolutely to be paid for real services, such as piloting the *Mary* or guiding us about, and nothing was ever missed from the ship after their visits.

The pretty confusion of some of the younger women who brought presents to C. B. was good to see—a basket, a shell hat band, a strip of tappa cloth, would be held quietly until the bearer summoned the courage to make her gift, and after that she went away happy with what was given her in return.

C. B. has gifts from the women of nearly all the islands we visited. They brought rare or matched shells, coral of all available colors, necklaces of gay

THE MASTER OF CEREMONIES MADE ORATION BEFORE EACH FIGURE OF THE DANCE


TABU.
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Taata i Tahauku nei
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maaoviri ete maumea too
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Tahauku,

THE MARQUESAN WAY OF SAYING *VERBOTEN*

The cliff beyond Omoa showed its great cross only in certain lights

Coconut palms at Ua Huka

fruits, bottles of exquisite tiny fairy shells already pierced for stringing, which represented hours of time and trouble.

Sometimes they showered us literally with fruit, tossing it aboard from their canoes as the *Mary* came to anchor. Many went beyond these simple tokens of friendship and brought C. B. and me, and especially The Doctor, such gifts of real value as two eggs when eggs there were none, or one chicken worth nearly its weight in gold.

In return C. B. presented them with cans of this and that unfamiliar edible, such as jelly or spaghetti, with bowls, glasses, colored spectacles, candles, and 5-and-10-cent-store jewelry. The children were enormously excited over dolls, toy balloons they could blow up themselves, little mechanical toys, and whatever else Cleaves in his wisdom had brought along to give them.

Electric flashlights went like hot cakes, and I am sure electric sparklers would be worth ten times their weight in mother-of-pearl.

The Chief at Hana Vave presented me with a mother-of-pearl bonito hook armed with a pig's tooth point, and I countered with several big fishhooks. When he was sufficiently mellow I was his good friend, but his admiration for me sank out of sight compared with his worship for the Second Mate after he had seen him muscle out and hold at arm's length a 35-pound dipsy lead.

To him Chief Bouyer offered the exalted job of Chief of Police and a gold-braided coat to wear in that capacity; and as a proof of good faith he showed him the coat!

The Marquesas Islands are well nigh stripped of portable antiquities. In the course of the years, ship after ship has carried away what it could pick up—sometimes as presents from the natives, sometimes as goods acquired in trade, sometimes as plunder taken with a strong hand or by stealth.

One of the reasons why Nordmann described Fatu Hiva as a dangerous island was that an English tourist vessel, a sort of dude ranch under sail, had carried off a tiki some years before under circumstances that made much trouble. The natives remembered, and there was marked suspicion on their part until we had made it clear that that was not our breed.

The day before our ceremonious "at home" I had gone back to Omoa in the launch to bring Father Olivier to the *Mary Pinchot* at Hana Vave. The old man, eighty-four years of age, heavy with a notable plumpness, afflicted with elephantiasis besides—the clearest possible token of his long devotion to his flock—made nothing of coming out through the heavy surf and shifting from the light native pirogue to our larger boat.

With some anxiety we watched him take his seat in the tiny outrigger canoe while she was still ashore, watched her dragged into the edge of the water by some of the native men, and with relief saw her shove off just in time to paddle beyond the reach of the great surges, as one of them came smashing down on the spot where Father Olivier had sat a moment before.

Our lines had been out all the way over and by the time we got to Omoa we had six fine fish. The largest we gave to the men who brought Father Olivier through the surf, and at Hana Vave we put the others ashore with him as his gift to his people.

The shadow of a dying race was over the old Father no less than over his flock, and in spite of his natural vivacity a marked sadness seemed to tone into gray everything he said or did. On parting with him the next morning the kind old man gave me a farewell gift of two brilliant coppery Buprestid beetles. I think he was sorry to have us go.

To C. B. he presented a miniature carved paddle. But that was not all. His other gift was a little French book bound in yellow boards entitled *Consolations for a Widow.* However much C. B. may have been in need of consolations for a wife, this might fairly have been called crowding the mourners. It was a touching gift, nevertheless, for I imagine it was all he had to give.

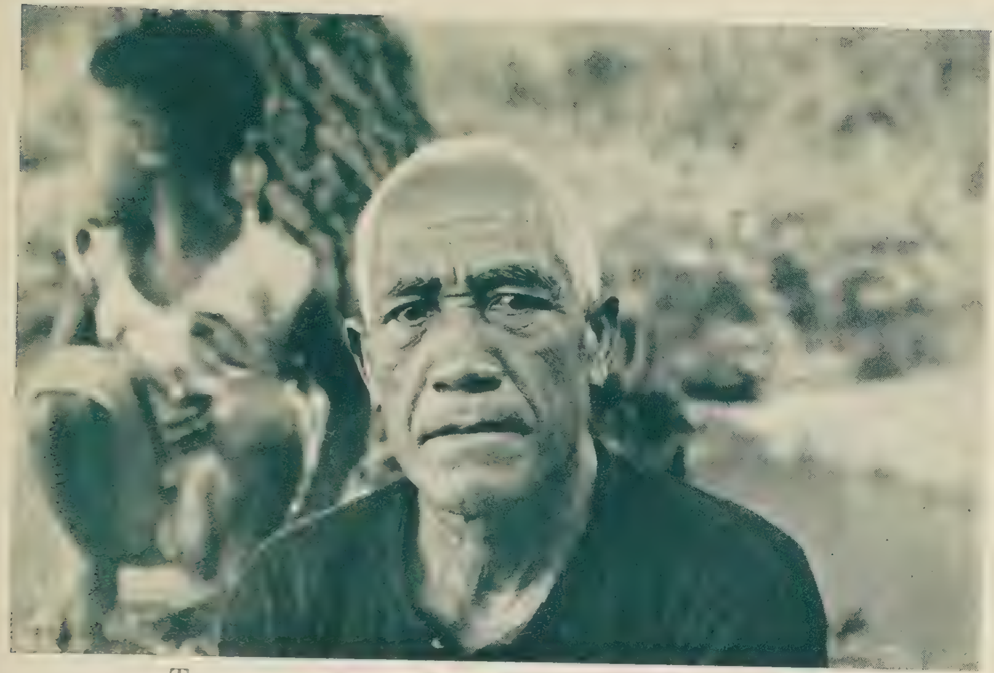
We had great difficulty in getting Father Olivier to take even little luxuries for his table from the ship. Evidently he had adjusted his life to native living, and was rich because his wants were few. What he did consent to take I suspect he gave away after the *Mary* had gone. We were not to see him again, and it seemed very sure that this faithful old shepherd would never again set foot in his beloved France.

The day of the party dawned bright and beautiful, although clouds still hung over the peaks. At Chief Bouyer's request I sent Father Olivier back to Omoa in the launch, which later reported his safe passage through the surf. Prof and I went to have a look in the interior of Fatu Hiva and collect a snail or two. By this time, as C. B. expressed it, we had all become exceedingly snail-conscious. It was during this excursion that I made my earth-shaking discovery of the tree-climbing angleworm.

Prof had set me to work collecting the minute and delicate land snails that dotted the long slender leaves of a little palm. But the first leaf I reached up for and pulled down, to gather its inhabitants more conveniently, added a new fact to my experience—the fact of an arboreal angleworm.

Now as a fisherman I am thoroughly familiar with angleworms. While I no longer use them myself, preferring the dry fly, I have no scorn for those who do. I have dug them by the quart, and I know where to find them. But this was the first time I had ever seen an angleworm up a tree.

In the axil of the leaf I had pulled off was a little pinch of humus, and in the humus an unquestionable angleworm perhaps two inches long, and a very lively



THE OLDEST INHABITANT, A GIANT IN HIS YOUTH

MR. AND MRS. PINCHOT AT HOME

THERE IS NO PLACE LIKE HOME IN NUKU HIVA one at that. I tried to collect him, but he fell into the foot-deep litter on the ground and was gone.

The next leaf, however, provided another, and the next still one more. After that, tree-climbing angleworms were definitely added to the list of contradictions I have known.

Whether the small boys of Polynesia who need them in their business go climbing for angleworms I do not know. In any case, in testimony of the truth of this evident impossibility I offer the angleworm and Professor Henry A. Pilsbry, Curator of the Academy of Natural Sciences of Philadelphia, as witnesses beyond impeachment or even doubt.

After our long day's tramp, Prof and I had just sat down to supper when the first contingent of Mrs. Pinchot's guests began to arrive. Not the least part of their satisfaction in coming was the ride from the beach to the ship in what they called our "Gasoline." Apparently there is for a Marquesan no higher privilege. Wherever we went in these islands the thing they wanted to see and the thing they wanted to ride in was the boat that went without paddles or sails.

In successive trips of the launch the whole village came out—men, women, and children—babies at the breast and the oldest inhabitant—all in their Sunday best and all intensely curious.

Ours was the first yacht large enough to entertain them that had ever entered their harbor, and everything about her was strange and new. As they stepped on deck and shook hands, they gave us the Marquesan salutation "Kaoha Nui," usually abbreviated when spoken to "Kao." Then they scattered over the ship.

The little policeman was there, representing Authority. The oldest inhabitant came, too—a magnificent old man, in canvas sneakers and a straw hat, evidently highly respected—and a host of others. They swarmed through the *Mary* from stem to stern and could never get enough of looking.

The time of bronze statues in the Marquesas is past. Even at their work we rarely saw a man, and never a woman, in a pareu, the strip of bright colored cotton cloth which succeeded the old clothing of tappa, beaten out from the inner bark of trees on a block of wood with a wooden mallet. The men wore shirts and trousers, the women one-piece dresses. The clothing of our guests differed from ours only in degree. Ours was a little better and there was a little more of it.

But in another matter there was a difference. Our women use white powder and red rouge. The Fatu Hivan belle's toilette is simpler. On festive occasions she paints her face with a single color, yellow, and lets it go at that.

Our guests were coming on board not only to see strange sights but to eat strange food and take back such presents as the white man's vessel might be able to provide. They filled our deck, fifty or sixty of them, the women sitting cross-legged on the planks, the men in such seats as we could give them. There is a parable in this, but I am too well trained to develop it.

C. B. gave the women bright-colored scarfs. My contribution to the men took the form of coils of fish line. Several times I went round the deck giving two big fishhooks to each, and not a single time did anybody that I passed by, as I did more than once by mistake, ask for his or her share of them. But again and again someone with fishhooks in hand would point out that such a one had been overlooked. They were good people. And throughout the evening they behaved with a propriety and restraint that were perfect.

The more transportable items of the supper, such as doughnuts, fudge, and even rice pudding, the natives saved to carry home with them in boxes and scraps of paper or cloth. After the nontransportable items had been consumed there was a sigh and a pause. Suddenly the oldest inhabitant, a giant in his youth and with traces of his former energy still about him, demanded strong drink. We had, of course, none to give him, but we offered him instead a mixture of fruit juice and tea decorated with prunes and pie cherries, a boilerful of which was the best liquid refreshment our commissariat could provide.

The old man took it for what it was not, pounced upon it, drank five or six glasses as fast as he could pour them down, walked off in high elation and expectation of results, and sat down to wait for the kick. But no kick came, and deep gloom settled over the ancient until other matters diverted his attention.

Before long our guests, at our request, began to dance. At first they danced standing, crowned with flowers, the men in one line and the women in another, under the direction of the Master of Ceremonies, who issued his orders in a long speech before each figure.

The dancers were stimulated by the expert performance of the diminutive native policeman on the kerosene can hereinbefore referred to. The dances generally were not unlike the Hawaiian dances with which vaudeville has made our people familiar, except for one thing. The very best dancer of all, a fiery and very beautiful young man, kept out of the regular line, but from time to time broke in and set everybody's blood atingle by the vigor and snap and lightheartedness of his performance.

We saw this youngster later at Tahiti, where he had been taken to act in a South Sea movie. So close is civilization to the wild, even in the South Pacific.

The sitting dance was really lovely. The women, one behind the other, knees on the ground and almost sitting on their heels, swayed from side to side. They did their dancing chiefly with their arms and hands, which were notably slender and delicate. This sitting dance was dainty and ethereal to a degree. We could never have enough of it.

Cleaves photographed the standing dance and the sitting dance, while the other members of our party passed around refreshments and received courteous "thank you's" in return.

Right here the little boys were very much in evidence. The little girls were all in the convent school at Atuona.

Now it was our turn. We shot off roman candles from the stern, but they were only modestly successful. C. B. then distributed those little sparklers, made of some aluminum compound on a wire, whose brilliant coruscations do not burn. The whole party was fascinated by them, elders as well as children. They never tired of holding their hands against the cold fire, and until the last one had finished sparkling paid no attention to anything else.

In our ship's company of twenty-seven we found a surprising number of stunts available. A. K. gave a Sioux War Dance, into which the miniature policeman injected himself amid shrieks of delight. The Doctor danced a jig, with great applause. Torp, the steward, performed remarkable feats of strength and sleight-of-hand, to the admiration of all beholders. Sparks danced a waltz, which the Marquesans clearly did not regard as dancing, and I did what was charitably regarded as singing a song alleged to be comic.

Skipping the rope threw the Marquesans into ecstasies, but the hit of the evening came when the cook produced a length of cord, had his hands tied together with a handkerchief, passed the cord inside the handkerchief, and gave the two ends to a huge gray-haired survivor of old times to hold. He explained in pantomime that he proposed to escape from the line without untying his hands—and then he did it.

No man was ever more flabbergasted than that grizzled veteran since the world began. He stared, examined each of his hands to be sure that it still held at the end of the line, studied the cook's bound wrists, and then, totally unbelieving, demanded that the trick be done again.

Same preliminaries. Same result. Same stupefied amazement. Same demand for more. Meantime the rest of us, including Marquesans and strangers alike, were shrieking in gales of laughter until the harbor hills reëchoed our shouts.

The third or fourth time the trick was done the old fellow was convined that he was seeing what he thought he saw, so he must tell his friends about it.

A long speech in Marquesan followed, in which, with fiery gestures, he explained in detail just what had been done. Clearly he was telling them the thing was impossible, but just the same it was so. Then the trick must be done again, and still, like a child of younger age he demanded—Do it again.

By this time everyone on the ship but the cook and the veteran was utterly exhausted with laughing. I would have given my shirt for a moving picture of the old man's colossal amazement.

When the trick had been explained to him and the veteran's excitement no longer drove him into speech, the party broke up in a general burst of mutual good feeling. The babies had gone to sleep long ago and it was time for all hands to follow.

But first, with a thoughtfulness and dignity worthy of the finest breeding, our visitors danced their thanks to us—to Captain Brown, to Doctor Mathewson, who had been taking care of their sick, and to C. B. and me by name—or at least they came as near it as they could, for "Pinchot" was utterly beyond their power to pronounce.

The Fatu Hivans had behaved with the courtesy and the appreciation of ladies and gentlemen. We had done what in us lay to make them happy. In the language of the poet, a pleasant and profitable time was had by all.

XXI

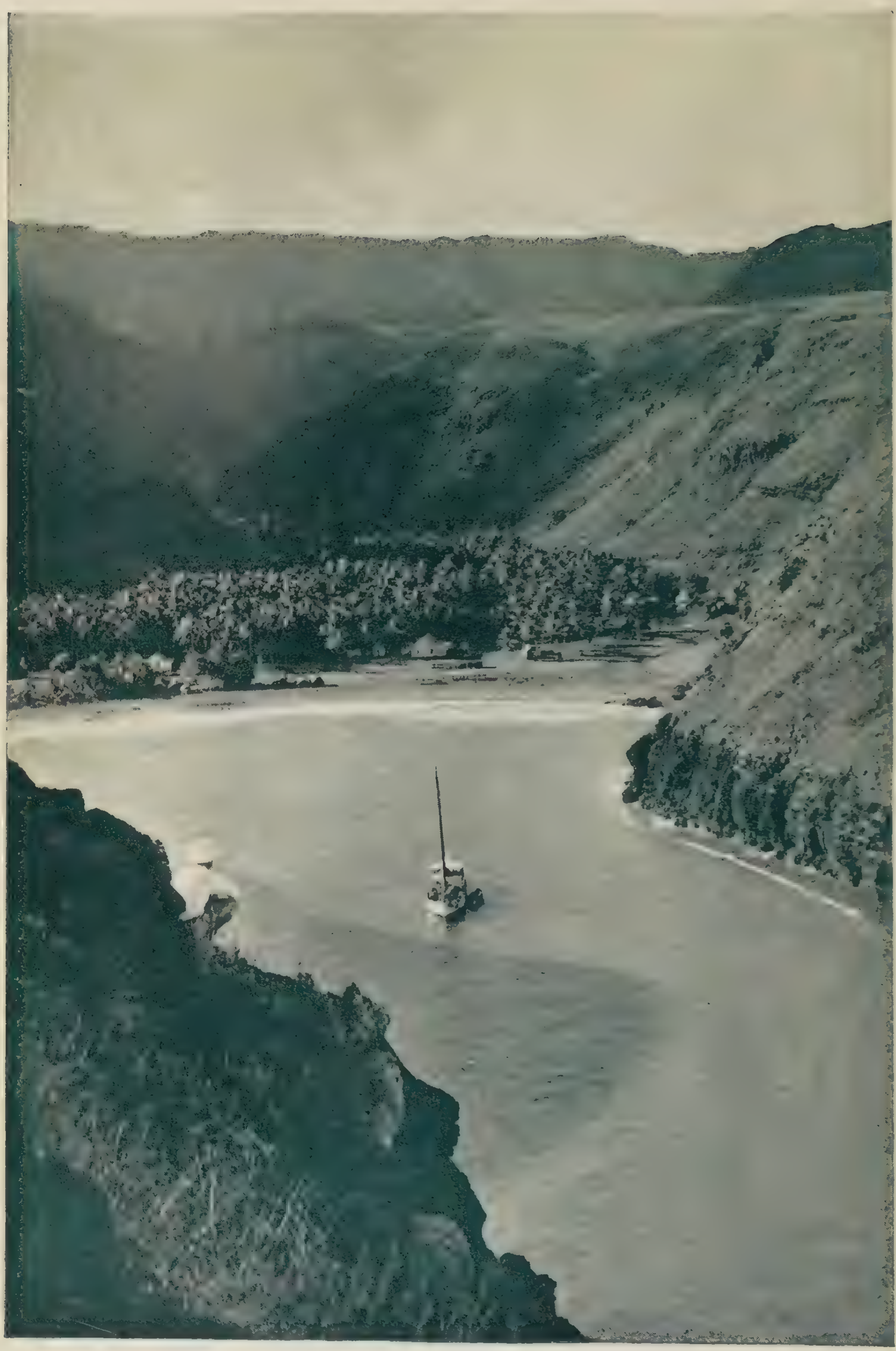
HAHA UA

REPORTS said there was a great bird rookery and many fish on the island of Ua Huka.

The Marquesas lie close enough together so that from Hiva Oa, to which we returned from the "dangerous island," it was only a few hours' sail to Haavie Bay (called Shaveh on the chart). The *Mary* cast anchor in eleven fathoms in the shelter of two islets which were as different from each other as it is possible to imagine. One was high, bold, rugged, a frowning mass of black lava rock that looked far larger than it was because of its gigantic outlines. The other, light where its neighbor was dark, smooth where its neighbor was rugged, low where its neighbor was high, made a complete contrast.

Over this low white island, whose name on the chart was nothing more poetic than Hat Island, but whose native name was Teuaua, and whose sides were vertical where they did not overhang, hovered thousands upon thousands of graceful Sooty Terns. We could hear their mewing from the ship. But could we find a way to climb those vertical sides to the rookery?

Sooty Terns like airplanes in formation filled the sky



The Marquesan village of Vai Paee, with a copra schooner at anchor

The Marquesas Islands are like this

Landing on Hat Island was less easy than it looked

Abandoned huts in the Marquesas

Over went the launch, and we hurried across to the native outrigger canoe we had already seen fishing near Teuaua. Perhaps it could tell us the way up.

There were three Marquesans in the canoe, a stout man of middle age with a fine, even a noble, head; a smaller, thinner, and less impressive individual; and a boy of ten or twelve.

The man in the stern fortunately spoke a little French. He was Alan Brown, a famous fisherman in his time, but now a cripple. We asked him whether Teuaua was climbable. He said it was. We asked him where, and he pointed out the place. More, he insisted on sending the boy ashore to climb the rock and take a rope up with him for us less catlike people to ascend by.

So we gave the youngster a piece of light line, and watched him worm his way to a ledge and from there do an excellent piece of rock scrambling as he carried the rope to the smooth top of the island, twenty or thirty feet above the water. Stiff, Giff, and I followed him. But no sooner were we on top than he went down again, dropping the six or eight feet from the ledge in Brown's pirogue with the accuracy of a plummet. With typical Marquesan courtesy, Brown offered us a great red-brown fish shaped like a huge black bass—evidently good to eat.

Meanwhile the launch went back to the ship for a couple of rope ladders, which we tied together and fastened solidly to a rock at the top. Very promptly after that, C. B. and all the rest were up among the birds.

It was a deafening and amazing place to be. The air was filled with uncountable thousands of screaming Terns. The ground was covered with uncountable thousands of blue-gray brown-spotted Tern eggs, while over the surface in every direction flopped or fluttered, stumbled or ran, other uncountable numbers of young birds in their dark gray youthful dress. It was almost impossible to walk about without crushing eggs or knocking young birds over.

If you strolled about, a curtain of birds rose in front of you, leaving a margin of a dozen or twenty feet between themselves and you. If you sat down, mother Terns came quickly back to their nests and sat and watched you six or eight feet away.

If you came too close, from time to time a mother bird would let her indignation overcome her judgment, and after bawling you out to the utmost limit of the Tern vocabulary, would bite an offered finger in defense of her precious single egg.

Many a dead young bird lay on the smooth ground. Many a little skeleton offered its delicate bones for nest building material. There were many eggs just hatching, many bitten through at one end, doubtless the work of rats, which we saw here and there hurrying from cranny to cranny. They were almost the only enemies the Terns had to fear. So the last thing we did when we left this anchorage was to scatter over the top of the island several quarts of poisoned oatmeal, which the birds would not eat, but the rats would.

We were so fascinated by the birds that we overlooked what the water had to show until suddenly, glancing overboard, we were almost struck dumb at the sight of a huge Sea Bat, or Manta, swimming so near and so directly beneath us that I could have tossed a biscuit on its back.

The gigantic Ray was utterly at home. If it saw us it gave no sign, but contentedly trundled its enormous body back and forth along the island within the space of a hundred yards, lifting its wing tips out of water as it went and showing its white undersurface as it banked in turning at each end of its beat. It was perhaps fifteen or twenty feet in greatest breadth.

The sharply and delicately pointed wings reduced the impression of great size which, nevertheless, was still impressive enough, while the rounded massiveness of its body gave the same tremendous feeling of power which we had learned to appreciate at Tower Island in the Galapagos. Coming in to Tower in June, The Doctor, who was on the bowsprit, had suddenly yelled to the Captain that there was a rock dead ahead. The rock was a Manta, but small blame to him.

In front of the huge mouth, which in this Ua Huka fish must have been nearly three feet wide, with an up-and-down opening of eighteen inches or so, were the armlike slightly overlapping feeder fins.

Much of the time the monster's back, and a square-cut fin at the root of its tail, were out of water. It gave very completely the impression that it was monarch of all it surveyed, and thoroughly aware of the fact.

Suddenly another Manta appeared, patrolling substantially the same beat. Then a third one, a little one this time, perhaps only eight feet across the wings, but black all over, whereas the two larger ones had carried great white patches on the shoulders.

We watched these strange creatures fascinated, and photographed them again and again. Then we saw the little Manta suddenly change its direction, put on speed, and swim directly through and along the line of a long narrow school of many hundreds of small slender fish, precisely as he would have done if he had been feeding on them. Perhaps he was.

The chance to study their habits was unique. But above everything else I wanted Mantas for the National Museum. These fish are very little known. Their size and strength make them difficult to collect, and undoubtedly some of their species at least are new to science. So I let collecting overbalance observation, and that was my mistake. A little patience would have given us both.

We hurried down from the rock, jumped off the last ledge into the bobbing skiff, got ready the harpoon, and started for the nearest Sea Bat.

After a very little maneuvering, the big white-shouldered one swam right up to me. I struck it as hard as I knew how with the big whale harpoon, just about in the hinder part of its left side under the white mark. The pole stopped short in the most satisfactory way (showing that it had gone home). The Manta passed under the bow and headed northward toward the ship, taking out line steadily but not very fast.

About a hundred yards away it came to the surface and made a tremendous thrashing, which we could see very plainly. Then it took another couple of hundred yards of line, again toward the *Mary Pinchot*. At that time I had it towing the launch with no great strain on the line, being extremely anxious not to lose it by rough treatment.

The second time it came to the surface I saw the harpoon pole waving back and forth. Then we began to pull in. But while Stiff was hauling in line and Bourget coiling, the line went slack.

When the end of the line came in we found the harpoon pole still on it, but the iron shaft bent into a corkscrew. What undoubtedly happened was that the powerful thrashing of the fish got purchase enough against the water to twist the iron out by using the pole as a lever. This meant that we must give up the old whaler's method of fastening the iron to the pole and instead fix it so that the pole would come loose, as the swordfishermen do.

It was too late to go for another Manta that night. Bourget spent the evening rigging the other whale harpoon on a chain for extra strength, and arranging it so that the handle would come out.

The Marquesans distinguish three kinds of Mantas, for which their general name is Haha Ua. Huki of Hana Nui, whose father was Vaapulona, gave me their names. Ipuohotea has white marks on its back and belly; Toake also has white marks on its back but has a high ridge of backbone which extends from the head to the tail; the third is Pakoka, which, unlike the others, has a black undersurface.

The next day Alfred Brown, son of Alan the crippled fisherman, a tall, muscular, fine-looking fellow with a strong face and direct eye, agreed to show us the Marquesan method of catching Mantas.

It was arranged to have Cleaves photograph the harpooning. We landed him and Bish on the Tern rock, where we found the sea just swarming with Mantas, both black ones and white-marked ones, and we had forty chances to harpoon them, more or less, while waiting for the camera to get ready.

Then when it was set up, just under it, at exactly the spot Cleaves wanted for his picture, appeared a white-marked Manta which swam directly toward us. It was precisely what I wanted, and came to precisely the right position. I struck with the whale harpoon, attached by its bronze chain to a heavy hickory handle, and I struck just as hard as I knew how.

The harpoon stopped short, as it always does when the throw is lucky, and the Manta, after a perceptible pause, rushed forward on the surface away from Cleaves, who was grinding away, turned and rushed back toward him, thrashing its wings on the surface and making a magnificent chance for a picture.

Then it dove and swam very swiftly directly away from the island toward the *Mary Pinchot.* Within one hundred yards of us it rose to the surface and waved its wings and whirled about in a perfect blanket of white foam. Then it dove again and made a still longer rush, and then a smaller one, again toward the ship.

I let it go with very slight resistance at first and gradually worked the launch under way (the engine, of course, was stopped). When the fish had run out another 200 yards of line it came to the surface once more, slashed about again viciously, throwing the harpoon pole (which had failed to come loose as we meant it to do) from side to side with tremendous power, and once more dove.

I was at the line and handled it very gently. Then Stiff came forward and began to pull in. Marcel Tixier, the obliging French trader on this island, and Brown coiled the rope. The Manta was now almost directly under us, moving very slowly but mainly to the west. I kept a light but steady pressure on it while Tixier explained that the natives believed it was impossible to take a Manta unless the iron went clear through and toggled against the underside.

About that time the great school of Porpoises which we had seen early in the morning to the northeast of us near the beach came in sight. As before, some of the fish (as sailors call them) were making marvelous leaps into the air, three or four times their own length, while others as they rose to breathe were moving side by side with perfect uniformity and precision.

Meantime, on Tixier's statement that Brown thought our special light whale line was not strong enough, I sent Bud to the ship to bring a heavy rope and a lance. While he was gone Bourget rigged the spare harpoon, a lily iron, for the Porpoises were coming straight toward us. They came all around us but kept beyond my reach and I never got a shot.

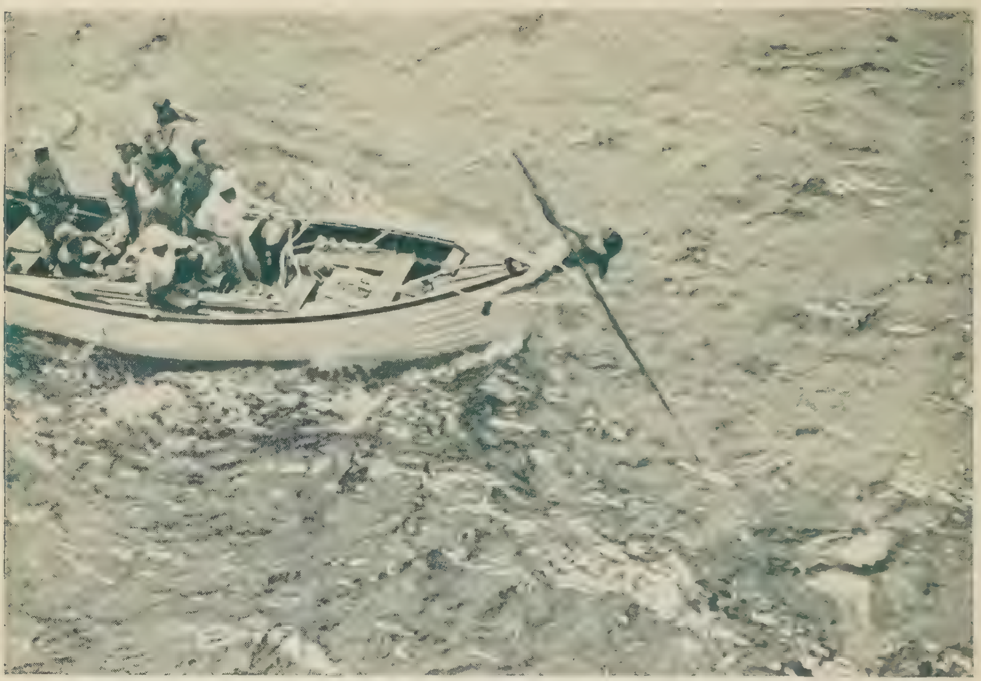
Meantime Brown and Tixier were applying much more pressure to the Manta than I thought wise and shortly after I had put away the spare harpoon the iron drew. A tremendous disappointment.

Seeing we had lost it, I asked Brown if he was willing to harpoon one by his method right away, and he said he was.

His method is hardly to be recommended to persons of a timorous disposition. It consists in jumping bodily on to the back of a Manta with both feet, and then driving the harpoon home and instantly jumping off and swimming back to the boat.

We went over to Hat Island (Teuaua), changing to the heavy rope on the way, and signaled Cleaves.

His weight is reckoned in tons


Marquesans harpoon Mantas by jumping on their backs

They scarcely look eighteen feet wide

As he was moving his camera, a huge Manta, just the one he wanted, a white-shouldered one, came down the wind. We had to wait. It turned and went back the way it came, as these huge fish have a habit of doing. Then Cleaves waved that he was ready.

Brown, who had taken off his clothes and put on a *pareu*, stood up in the bow of the launch looking magnificent in his parsimonious red and white costume. We rushed the launch after the Manta and met it coming back.

Brown jumped off the bow squarely on top of it, and as he struck I saw him dig the harpoon in with all his strength. Then he fell off sidewise, disappeared under water, and the next I saw of him was his head as he climbed into the launch amidships. It was so quickly done that he was aboard before the Manta had fairly started. And the Manta had lost little time in his attempted get-away.

First, our quarry made a magnificent rush on the surface, whirled the boat about, and almost pulled the gunwale under, but the heavy rope and the heavy harpoon held it. The sea almost came aboard on one side and then on the other, and the huge wings threw water over us. The ocean seemed to boil under our bow where the great fish, never more than thirty or forty feet from us, was constantly in sight. At one time its wings rose above the gunwale on both sides of the boat at once.

The size of the fish as we looked down into the water seemed simply incredible. At times it looked black, at times its white undersurface appeared. It was doing all it knew, but Brown and Tixier at the heavy rope, passed through an eyebolt in the bow, controlled it fairly easily. I have always believed in that method of handling a harpooned fish since I tried it at Tower. This time I could see it was perfect, whether for using a long line or a short rope, as we were doing this time.

Here my diary gets excited:

> "Brown and Tixier gain line. The Manta is directly under us. It slaps the boat viciously with one wing and then the other. Bourget seizes the lance, waits his chance, and plunges it vigorously in. Of a sudden all the water is crimson with blood. Down goes the lance again, and the great fish writhes and turns in a blaze of protesting energy while the water flies all over us.
>
> "Soon the stab wounds, wisely directed at the gills, begin to tell. On the bow stands Brown with the huge shark hook, which he had insisted upon my bringing along, in his hand. He jabs the point first into the wing, but cannot drive it past the barb. Then Bourget grabs it, thrusts it into the mouth, and jerks it home.
>
> "One of the Manta's wings slams the boat hard. The tail slaps the water and narrowly misses some of us in the boat. The great fish, now most of the time on its back, raises the wide bottoms of its wings on both sides of the launch together. Now a surge carries first one rail and then the other almost under water. The sea for yards and yards is absolutely crimson with blood.

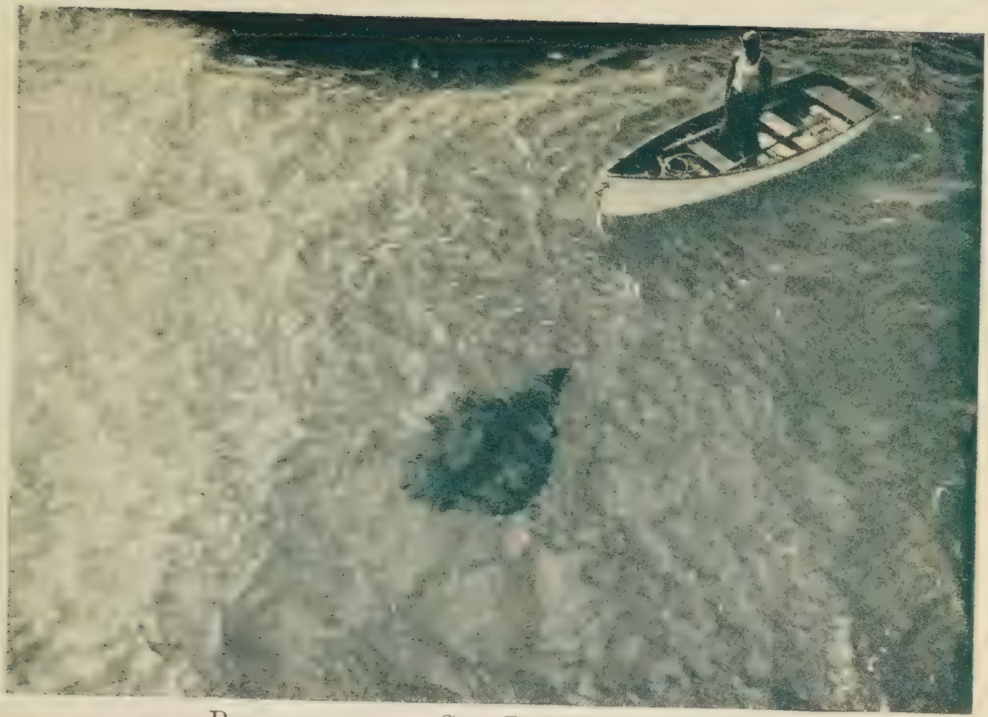
> "Then the struggles weakened, we started the engine, and the launch towed our gigantic captive slowly but steadily, and still protesting visibly, to the ship. There we photographed the great body, first one side and then the other, as the Captain worked at the far from simple task of raising the Manta out of water.
>
> "We hooked it in the lower jaw, and its huge weight broke its jawbone in two. We hooked it in the upper jaw and through the base of one of the great lip fins. Then we raised it at the forward launch davit with three shark hooks and several ropes fast to it to take the strain.
>
> "As its head rose a yard or two above the bulwarks, the weight tore two shark hooks through the flesh, broke the chain of the third, and snapped the lashing around the lip fin. Down went our huge trophy into the sea without a line on it. I thought it was lost, but Bud from the launch promptly gaffed it, Bourget hooked the shark hook once more in its mouth, and it was ours as much as ever.
>
> "Ropes were then put through the gill openings and otherwise hooked on to it, and we raised it over the rail and on to the deck by the fore throat halyards.
>
> "Stiff had photographed its back and belly several times at my request. Then we proceeded to measure it. The total length from end of lip fin to end of tail was fourteen feet two inches. The breadth from tip to tip of the wings was eighteen feet five inches. I thought that was big enough."

That is how we took Ipuohotea (unless it was Toake), but in any case Pakoka remained to be caught. So one morning after we had landed C. B. and the two boys at Vai Paee, enroute to Hana Nui where the Tikis were, and after we had towed several pirogue loads of visitors to the ship from Vai Paee, Alfred Brown, his two brothers, Frederick Goltz, an old-timer in the islands, and I went to look for a black victim around Teuaua, where Haha Uas were common chiefly at high tide.

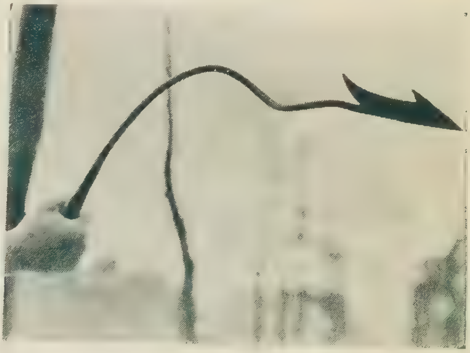
A black one and no other was our game, and Alfred Brown was to do the jumping. Almost at once he saw a black one, but it kept carefully out of the way. Then we hunted around the eastern part of the island in a very rough sea, with a gorgeous surf breaking against the cliffs. Brown was magnificent as he balanced himself on the point of the bow, standing straight and easy as the launch bucked and twisted under him. White-shouldered Mantas were plenty, but the Pakokas we saw were all too far away.

Back around the point again Alfred Brown saw his chance. He poised, raised the harpoon, tensed himself, and sprang. Fair on the back of the fish he landed and sunk his iron in fine style, but somehow not just right. Under the tremendous strain, within a minute or two, the harpoon pulled out. Hard luck, but never mind.

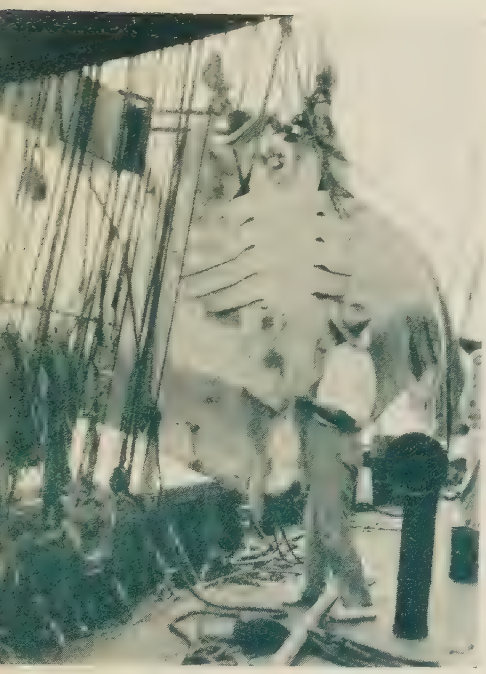
Then at the eastern point of Teuaua, close to the submerged rock that we had thought was a Manta time and again, Brown got another chance. Feet first he jumped on to the Pakoka's back, drove his harpoon clear in, fell off, disappeared under water, and came up again. But when he rose the 2¾-inch



Bud watches a Sea Bat from the skiff



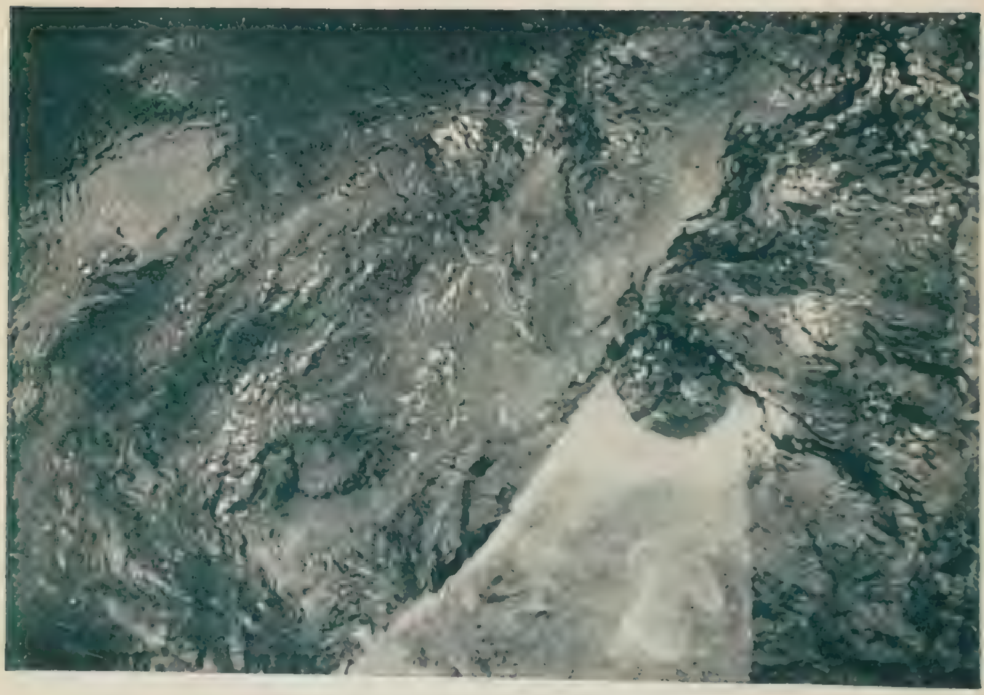
A Sea Bat twisted this harpoon



Men are midgets compared with Mantas

A Sea Bat broke the whale lance

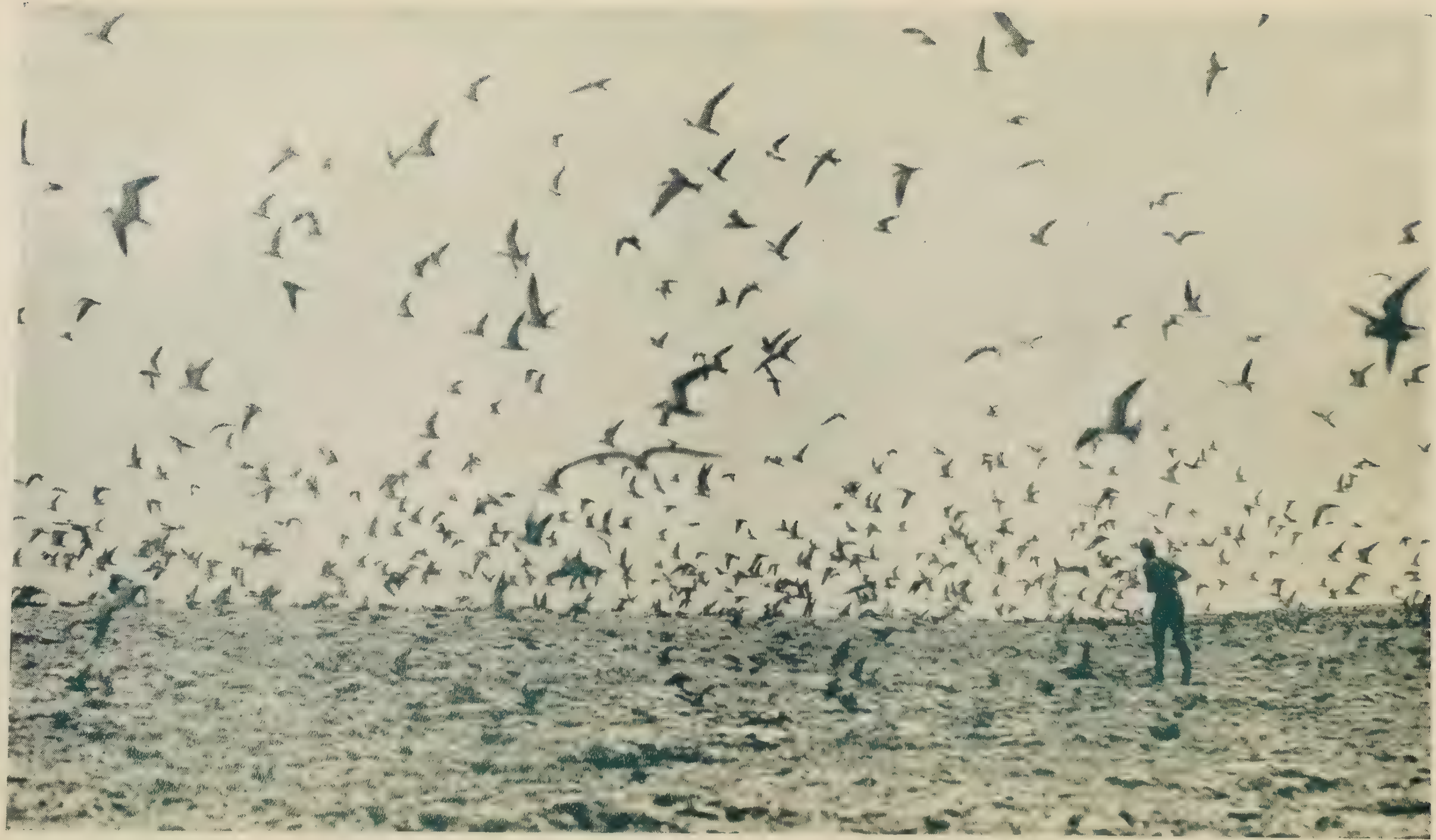
A twelve-foot Tiger Shark bites a Manta's wing



The bite he bit

WE GOT THE SHARK THAT BIT THE MANTA

PURSUIT OF SCIENCE IN THE LARGE



At every step on Teuaua a curtain of birds rose into the air harpoon line and the 12-thread bib line (which held the harpoon pole) were both under his chin. He ducked his head instantly, freed it, seized the gunwale as the launch swerved past, and Bud and I dragged him in.

Then began a spectacular and most rapid fight. This Manta was far swifter and more aggressive than the white-spotted one. It whirled the boat round in a complete circle so fast that a miniature whirlpool followed the bow. It pulled the bow down and the gunwale over, and, in spite of everything, the Manta took out the line. The launch was nothing to its power.

The first long run was directly toward the great cave on the north side of Teuaua. It was actually in the entrance, and we not forty feet behind it, when it turned, swung toward the heavy reefs to the west, swung away from them just in time to save us from disaster, and then headed straight for the passage filled with great breakers between Teuaua and the island beyond. Here it hugged the shallow bottom, swimming in plain sight beneath us, and then it turned and whirled us about in circle after circle. Every effort to bring it near the surface merely left us breathless and the fish just where it was.

By this time the rope, strong enough to hold a team of horses, was so frayed that it seemed as if the Pakoka might actually break it.

This part of the fight went on for ten or fifteen minutes. At last, by getting in every bit of line we could each time the fish rose a few feet, we finally brought it near the surface. Its wings began to show above the water now and then. We saw that they really were black underneath. Great luck!

The fish never had more than fifty feet of line. Now it was within twenty feet of the boat, but moving so fast that as I crouched with the lance in the bow I could get no chance to strike. Finally it swung near enough, and the thrust was followed by a great gush of blood which reddened the sea. After another thrust or two the launch was floating in half an acre of red water.

The fish turned upside down beneath the launch, raised its great wings on both sides of us at one time, and drenched us with water. I struck with the lance again and missed, and at the same time one of the wings gave me a lively headache with a resounding blow on the top of my head.

The end was coming. The fish began to weaken. We got the gaff in its mouth and a heavy shark hook through its wing. Then I succeeded in jerking one of the shark hooks through its upper jaw and the fight was over.

Arrived at the ship, I tried to work a piece of rope up through a gill opening into the mouth to lift the heavy fish by, and got the black pigment of the fish's skin so thoroughly tattooed into my wrist by the sharp and very irritating prickles which covered it that now after six months the mark is with me still.

This fish, Pakoka, was altogether a swifter and harder fighter than Ipuohotea, the white-shouldered kind. Its size was almost the same. Total breadth across the back, seventeen feet six inches. Total length, fore and aft, ten feet eight inches.

Once the Pakoka was hoisted aboard the launch, we started to look for Toake. But the two we saw kept too far off for Brown to jump. Then as the tide fell the Mantas disappeared. The hunt was over. But a ton and a half of fish was enough for one day.

XXII

THE ROBBER CRAB

NEARLY everybody has his own mental refuge from routine, some figure or place or thing that to him means romance—Julius Caesar or John Bunyan, Gerard the Lion Killer or Babe Ruth, Brer Rabbit or Rikki-Tikki-Tavi.

One of my refuges is a certain pickerel pond near home in Pennsylvania, where my mind takes me continually. Another has always been the Great Robber Crab. I like big things—big rooms, big fish, big dogs, big leads in my pencils, wide prospects and, naturally, big crabs. And the Robber Crab is one of the very biggest.

Who could fail to be fascinated by a crab strong enough to break into a mature coconut with its claws—a job for a strong man with a hatchet? Moreover, by trade I am a forester, and this crab climbs trees.

Do you remember in Rider Haggard's *Allan Quartermain* that exhilarating passage in which the adventurers, having just failed of roasting or boiling in the underground river, where the Rose of Fire bursts through, drift out uncooked but unconscious, to find themselves in a deep and dreadful canyon where, on a beach of black boulders, they are assailed by gigantic crabs—crabs that can scream? I expect I have read that passage a hundred times.

The Robber Crab looks like a cross between a Stone Crab and a dissipated Lobster. It is longer than it is broad, which is not crablike, and at the same time it is bloated into three times the breadth of an ordinary Lobster, as the illustration shows. A single leg of such a crustacean in the prime of crabhood may measure more than twelve inches, and the whole spread of the beast is wider than the shoulders of a six-foot man. Its colors—blue, or red, or yellow, any or all as the case may be—are as violent as its shape is queer. And its habits are stranger than its shape.

These huge and powerful lobster-robber-crabs divide their time between holes in the ground by day and tops of tall trees by night. When they are up in the palms cutting off the nuts for supper, the natives deceive these robbers to their undoing by fastening a thick band of fiber around the tree. When the descending, fat, sensitive tail of the crab encounters this obstacle, the tree climber imagines that he has reached *terra firma*, lets go all holds, and his hard shell is smashed on the stones artfully disposed by the natives for that very purpose.

We started with a good but not a stiff breeze on our passage from Eiao to the Tuamotus, where Robber

Crabs do grow. The first night out it began to blow. Next morning, for the first time since the gale off the Jersey coast, we had a strong sailing breeze. Indeed I would have been satisfied with something less.

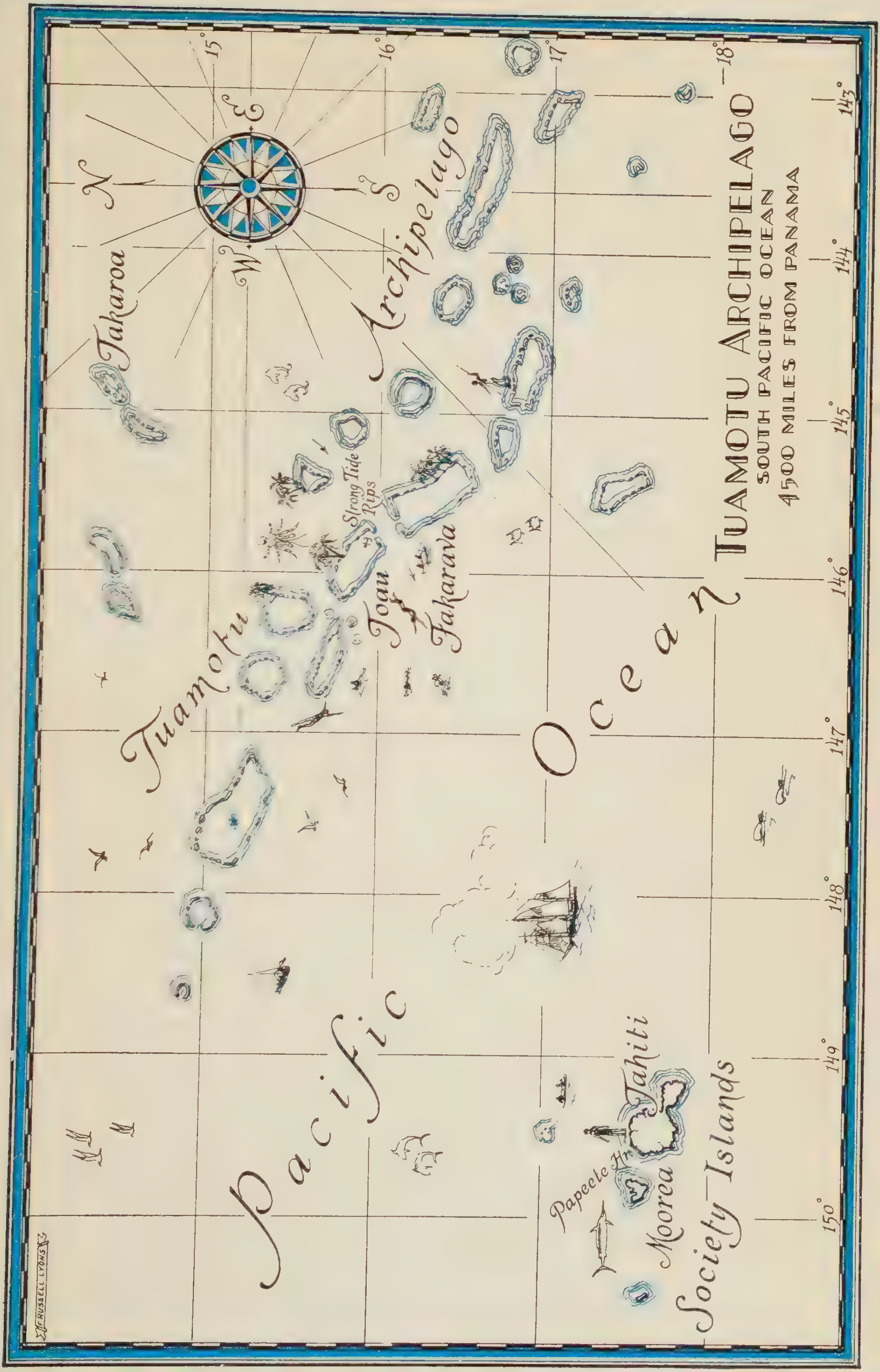
Over waves not less than twenty feet from crest to hollow we sailed all day with mainsail, foresail, forestaysail, and jib, but not making much time since the wind was forward of the beam. Once when I got the Captain to head her off for a few minutes, the ship responded with ten knots.

In spite of the heavy sea she was always dry and comfortable, moved with the smoothness of an old shoe, and proved herself, on this particular stretch, even a better sea boat than I had hoped. The balancing tables also more than justified themselves. Nothing could have been more satisfactory than the way they behaved.

The first atoll we touched in the Tuamotus was Takaroa. As we approached, it looked exactly like a Florida key—coconut palms standing over thick brush, bordered by a white beach.

As we came nearer we could see the wreck of a great four-masted iron ship lying high and dry on the reef, and then, almost in the passage, a wooden schooner, also out of water, lying on her side with much of her planking gone.

This is the island where the *Coast Pilot* gives eight fathoms as the controlling depth in the pass, and then adds, "This permits the entrance of vessels of


TUAMOTU ARCHIPELAGO
SOUTH PACIFIC OCEAN
4500 MILES FROM PANAMA
N
E
S
W
Takaroa
Tuamotu Archipelago
Strong Tide Rips
Toau
Fakarava
Pacific Ocean
Tahiti
Papeete Hr.
Moorea
Society Islands
15°
16°
17°
18°
143°
144°
145°
146°
147°
148°
149°
150°
F. RUSSELL LYONS

nine-foot draft." What might happen to any draft between I never could find out. But we left the *Mary* in the offing anyhow and went in with the launch.

As we came closer the sea was breaking on the long flat reef on both sides of the pass, and the tops of the waves were blown backward fiercely by the strong southeast wind.

We had already seen a schooner lying at the dock. Just beyond her were two or three small sloops, and on the shore two large sailing outrigger canoes with bowsprits and racks for sacks of copra. There was a pile of copra sacks at the wharf, and the schooner was evidently in process of being loaded.

Several men with coats and straw hats were standing among the natives, and the first words we heard as we set foot on shore were, "Are you Americans?" These fateful words were spoken in the American language by a man who looked precisely like what we afterwards found him to be—an insurance agent from the great open spaces. From the State of Utah, to be precise. But he was a Presiding Elder (Burbidge by name) in the Mormon Church, and its head missionary in French Oceania.

Many people are prejudiced against missionaries generally. I am not. I know too much about them. But what I wanted to find first of all at Takaroa was not missionaries, but Robber Crabs. I wanted to see one caught, handle him while still alive, and taste him afterwards—all of which ultimately I did, except the last.

That was one of the troubles with our trip. Many things I wanted to eat in a spirit of scientific inquiry were tabooed in the interest of scientific collecting. Every Robber Crab we got, for example, was carefully wrapped in cheesecloth, dropped into pickle, and shipped back uneaten for the future edification of visitors to museums in Philadelphia or Washington or various other parts of the world. Prof and A. K. maintained that Galápagos Tortoises and Robber Crabs were too rare to eat while the pork and beans held out.

A fine old native with a white coat and gray beard and a pith helmet had been introduced to me as the Governor of the island, but as he spoke neither English nor French I could only carry on a conversation with him through one of the Mormons. He willingly gave permission to collect birds, crabs, and whatever else might charm the scientific eye.

We tried to arrange for a hunt after some of the hard-shell objects of my long devotion through an English-speaking native, but he was far from encouraging. So we scattered to take pictures and look the place over, guided by the Mormon Elders, of whom there were four, all young men, and all very prepossessing.

These Latter-day Saints, like most modern missionaries, were far from exclusively occupied with the things of the spirit. They had built a fine coral church, with blue and yellow glass in the windows and

Sailor and barber too

Birthdays will happen on the best regulated ships

The Chief and G. P. compare Robber Crabs

The pearl divers helped bail out our lifeboat

When the lifeboat upset in Toau lagoon

Coconut palms with their feet in the water a fine steeple, to whose service they gave strict attention. But in addition they were busy doing what they could for the natives on the material side.

They found, for example, that the traders were cheating the natives by charging exorbitant prices for fishhooks, canned goods, flour, and sugar. So they started a store of their own where they sold—and sold at a profit—what the native needed at about a third of what he had to pay for it before.

Again, they found that the traders were systematically getting the natives into debt and then seizing their lands to pay for what they owed. So the Mormons undertook to break that up and save the lands for the original owners. Naturally enough, the gentlemen whose little games they smashed do not speak well of them.

Being an Episcopalian, I suppose I am ecclesiastically about as far from a Mormon as you can get, but at my age I ought to know a good piece of work when I see it. If I do, the Mormons were doing one at Takaroa.

This village (whose name is Tiokea) was more than fairly neat, and many of the houses far better than any native houses we had seen. Those built of modern materials were many of them raised on short piles, while some purely native houses, built on the ground, were walled with woven coconut leaves and roofed with coconut leaves in a different arrangement.

Dogs are often tests of prosperity, and the best looking dogs since Panama were here. There was a general air of well-being about the place. Also there was very little sickness. The Doctor found one case of amœbic dysentery and one of whooping cough. We saw no elephantiasis, and noticed no tattooing. There were no shops kept by Chinamen. Takaroan traders are white in color, no matter how they behave.

Not a single land bird gladdened our eyes, nor any trace of a Robber Crab, although Elder Mangum told us they existed on certain parts of the atoll and that he and his English-speaking native had caught six the week before. So we left.

I passed a very nervous night between Takaroa and Fakarava, the next atoll we put into. There was plenty of wind and sea, and the Tuamoto group is famous as a graveyard of ships. We saw more wrecks than we touched at islands, and one of the reasons is that the Tuamotus are mere shims of land from four to a dozen feet above the sea. At any distance or at night, they are visible at all only because of the coconut palms which cover them, and which look as if they were growing straight out of the water. Moreover, not one island out of twenty in the whole group has a light on it, and that one does not carry much farther than a shotgun.

As we approached Ngaruae Pass into Fakarava Lagoon, it looked exceedingly unpromising. A line of smooth water, full of whirlpools and current boils, extended across the pass from head to head, and just inside of it, great breakers gave a perfect imitation of waves smashing on a submerged coral reef. It seemed like certain destruction to any ship, but the Captain knew there were seven fathoms of water on the bar according to the chart. After looking the situation over carefully, he went ahead full speed and his confidence was justified. Within the pass we ran into smooth water at once. To our left was a small beacon on a little coral islet. It was the only beacon we saw out of nine or ten that were given on the chart. All the rest had disappeared.

We anchored in fourteen fathoms off the village of Rotoava, which is the seat of Government and Capital of the Archipelago. There were no Robber Crabs to meet us on the beach, but we ran into the promise of them and into something else at least as interesting. That was a personality.

Every now and then a human spirit so flames through its envelope that it lights and enlightens the whole region where it shines. We found one here in Madame Terorotua. "An apostle" was what the French administrator called her.

She is a teacher and the wife of a teacher. The two together manage the government school for boys on Fakarava. C. B., who is a member of the school board at home, and particularly interested in modern education, found in this tall and slender devoted young Tahitian not only a kindred spirit, but a modern educator in every sense of the term. She had intelligence, vitality, and pep enough for six.

I interrupted the pedagogical discussions of Mesdames Pinchot and Terorotua long enough to inquire if there were any Robber Crabs about. There were, and a young man ready to show us where and how to find them. So several of us took the launch, two natives, and a small boy from the school to translate, and started for some indeterminately distant crab-haunted point on the lagoon.

One hour passed and then another. Great heads of living coral showed yellowish brown through the marvelously clear water, alternating with stretches of the whitest sand. Occasionally we passed little houses squatting under immensely tall coconuts with their great leaves bent, all but one or two of them, straight away from the strong breeze.

We saw no people at all, for nearly all the men from Fakarava (and women too) had gone to Toau, where it was open season for pearl diving. The women dive as well as the men. The fishing is under strict control of the French Government, which has special seasons for different islands. The open season at Fakarava came a little later.

Our two natives, through the small schoolboy, kept indicating that point after point was the one frequented by the Crabs. Finally, after I was strongly tempted to return, and nearly everybody in the boat except C. B. and I believed our guides were simply getting a joy ride, they pointed out the densest grove of coconuts we had yet seen and announced that the much sought Crabs were surely there. The coconuts were not only immensely thick but immensely high. Beneath them was a little hut and lean-to, and we landed there directly from the launch.

A hundred yards back from the beach we began to run across deep indentations in the coral, almost pits, how made I cannot understand. In the bottom of the first one was a circular hole narrower at the top than below, and filled with water, in which was a large Crab—but not a Robber. Around the edges of the pit were Crabs' holes. Evidence that the climbing hard-shells were present appeared in burrows apparently occupied, and numerous nuts broken into by their strong claws. We went to pit after pit, every one of which was empty of crabs but entirely full of mosquitoes, until finally our natives announced that here was a hole with a crab in it.

Poking produced no result. Then we tried smoking out the Crab. Excellent effect on the mosquitoes but none on the Crab.

This was the most beautiful and luxuriant coconut grove we saw anywhere in the islands. The Robber Crabs certainly knew their coconuts, as Stiff remarked.

Dusk was not far off and we had to start back or get caught among the vicious coral teeth in the dark. We came back full speed ahead, with the wind behind us. It was black dark, however, before we reached the ship.

Once more no luck. But there was some consolation in our discovery of what was perhaps the most interesting thing we saw in the Tuamotus—certain ancient walls, one of which was built across the top of a little ridge that divided two of the pits. These walls may possibly have been built years before when the chief settlement of Fakarava Lagoon was on this spot. But they seemed very much older than that, and I am sure I missed an important trick in not having them photographed.

At Toau, however, where nearly the whole population of Rotoava had gone to cut copra and dive for pearls, Robber Crabs were said to be plenty. The best fishing, I have observed, is always in the next county or over the hill. If there really were Crabs at Toau, we wanted them.

So on a glorious sparkling September morning the *Mary Pinchot* left Rotoava and sailed out through Ngaruae Pass, which lay smooth as a lawn in the early light, without a trace of the great whirlpools or the tremendous breakers which the fierce tidal current had made in it yesterday.

The bottom of the pass, which had looked through the clear water so terribly near the surface then, looked just as near now, but there wasn't a grain of apprehension in it. We had been there before.

Toau is just over against Fakarava, and before noon, with the trade wind off the quarter, we were looking through Otuni Pass. But this was a different matter from Ngaruae altogether. Of this pass there was no chart. So the launch left the ship with several of us, including C. B., and we sounded as we went through, and the least depth we got was four fathoms.

A plume of smoke off to the right showed us where the Rotoavans were making copra. There was the Chief, Naea, and his son-in-law, Lucien, who acted as interpreter, and the two of them, with Naea's little five-year old son, came back with us in the launch to pilot the *Mary* in.

Naea was the kind of man you believe in the moment you meet him—courteous, quiet, obviously on the level, and looking you straight in the eye. He resolutely refused to take a cent for piloting us in, or even for sending his cutter back to Fakarava with a young man who had come from Rotoava with us; and this we found, was his regular custom.

Standing on the starboard anchor, Naea piloted the ship steadily and confidently through the pass and through two or three miles of coral reefs and heads, to an excellent anchorage in fourteen fathoms just off the village.

When the hook was down we were in water as smooth as a mill pond. So far as we could learn, no other ship but a native trading schooner had ever anchored there before.

Now for the Robber Crabs. But once more the best fishing was over the hill. There were no Crabs near the village, but they promised them to us for tomorrow. So C. B. and I spent the afternoon interpreting for The Doctor while he treated Naea's daughter for conjunctivitis; a little boy of eight for a bad boil on his ankle which had to be lanced (he bore it like a Trojan); and two old men for their legs and teeth, and other cases too.

They were nice people at this village. We took a real liking to them at once.

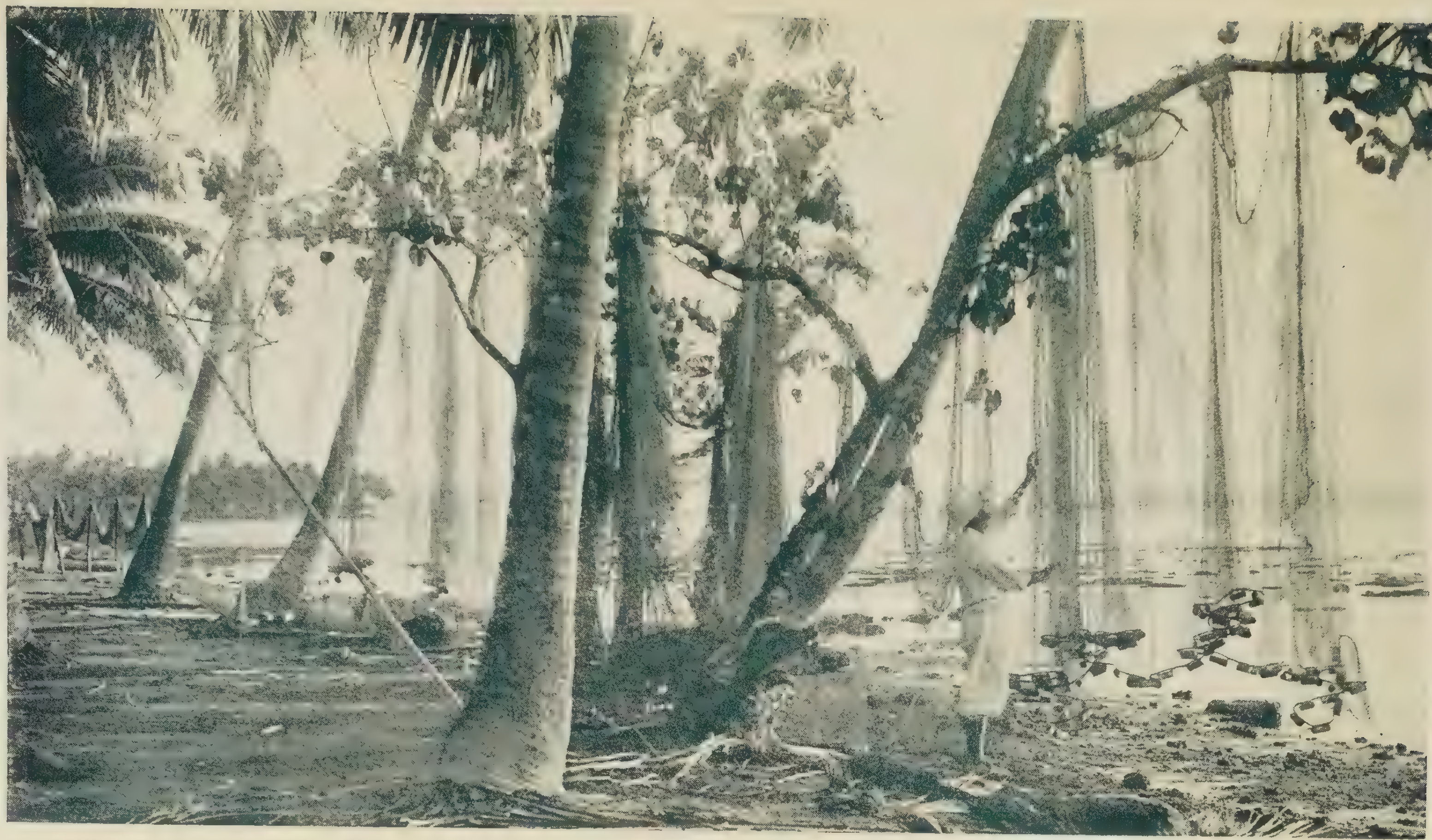
There wasn't a house to be seen that owed anything to civilization. Every one was made with braided coconut-leaf walls, coconut-leaf roof, and posts and rafters cut on the spot. This was the real thing.

But inside it was a different story.

In Naea's house was an American clock and a candy tin from Chicago. A colonic irrigation outfit hung beside two guitars. A modern canvas easy-chair, three coconut-leaf beds, with mats over them, two pens, some account books, and a lot of cans, and flour sacks, and odds and ends that were never produced on any atoll were all about.

Next morning we went off bright and early with about half the ship's company in two of the boats. Naea and half a dozen pearl divers were in the launch —magnificent fellows—and the tiny outrigger canoes they use in their diving towed on a line behind. The lifeboat had Giff, Stiff, and eight men of the crew.

Before long we had outdistanced the lifeboat, which went off to the pearling grounds by herself, and what happened to her is another story.

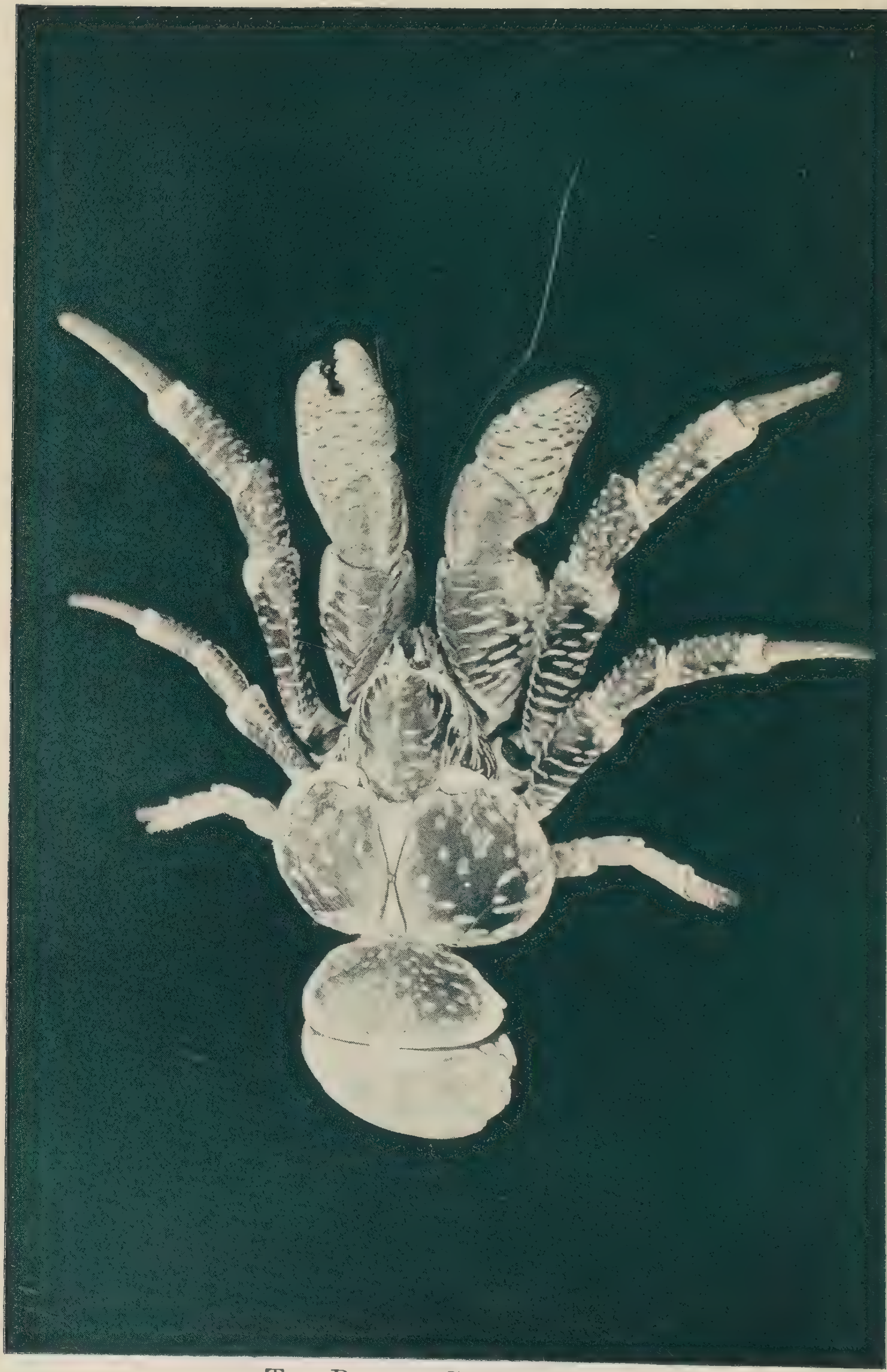


Nets drying on the edge of Toau lagoon

THE TEROROTUAS AND THEIR SCHOOL

M. and Mme. Terorotua

Chief Naea on the outrigger of his pirogue



THE ROBBER CRAB HIMSELF

We landed in the launch on an islet alight with that indescribable golden glow which I have seen only under dense coconut groves when the sun was shining and in groves of sugar maples in the fall at home. There is nothing else like it—a diffused radiance that lights up the landscape like a benediction.

This was the home of the Robber Crab.

Pretty soon one of the native boys arrived with an octopus which he thought I might like. It promptly twined itself around my wrist and arm, exerting a very real pressure, and then bit me with the parrot-like bill that was hidden in the middle of all its tentacles. I shook it off into the water with some show of haste, whereupon it shot out a cloud of sepia, thus proving that the beast was strictly as advertised. Then it moved itself over the bottom with its fantastic arms in a thoroughly nightmarish way.

C. B. and the others left us for the pearling grounds, and Naea and I walked deeper into the coconuts to look for Robber Crabs. First we found where they had shredded off the husks of coconuts in their amazing feat of breaking into ripe coconut shells. That looked promising.

Then the great moment came. Naea cried out he had found one. It was in the bottom of a deep sandy hole under a tree. I could only just see it, but oh! the difference to me. My first Robber Crab!

Naea widened the hole, reached in cautiously, seized the crab by one claw, and yanked it out.

At last I held my prize in my hands. To be sure, like the baby in the story, it was quite a little one. Its legs didn't spread a couple of feet like others we saw later, but it was what I had wanted to see and handle all these years.

When you pick up a Robber Crab you fold his first two pairs of legs against his claws into a sort of sheaf, and so long as you hold him strongly the beast is helpless. But it must be strongly, for the power in his legs is amazing and I verily believe that the nippers of a big one are capable of cutting off a man's hand. Merely to amputate a finger would be no feat at all.

Immediately the Chief's son and the boy Atani from Fakarava turned up with two others, one of fair size, very yellow in color; the other slightly smaller, and very blue. A little later one of the pearl divers, Tera of the brilliant yellow teeth, brought in a very little one. That made four for this particular islet.

Pretty soon Naea's son brought me a live Dove, a beautiful green and pink bird with coral feet, which he had snared with a coconut fiber made into a running noose, lashed with more coconut fiber to the end of a coconut stock. Then Yellow Tooth turned up with two more small Robber Crabs, and that made six.

Naea, Lucien, Atani, and I, with Yellow Tooth and the Chief's son, crowded into the Chief's pirogue and sailed across to another islet, for which the Chief had just paid 2,500 francs ($100) with the intention of raising coconuts on it.

Outside of both these islets ran the outer reef, with the great breakers tumbling over it a couple of hundred yards from the real shore. Between them was flat rough water-worn coral, filled with pools, and in the pools shells (not very many), and little Morays, which are the only fish I know of that will come out of water to attack a man.

These fierce eels (I have seen them six feet in length and nearly as thick as a man's thigh) have long narrow mouths filled with the most excellent teeth, which on several occasions small members of the Moray family attempted to exercise on large members of the *Mary's* family, jumping clear out of the water to do it, and even pursuing the escaping victim from one pool to another. How they get that way I don't know; but it seems to me this is very close to the climax of ferocity.

By the time we six had embarked again in the Chief's pirogue, the wind was strong and rapidly getting stronger. This sliver of a boat was less than twenty-one feet long, less than twenty-nine inches wide, and a good deal less than thirty-two inches deep — which were the measurements of a larger one.

Under mainsail and jib the pirogue simply flew through the water. In no other craft have I ever had such a sensation of speed. Naea sat on the outrigger boom as far out as he could get, I perched on the end of a plank wedged inboard and stretching much beyond the rail, and the others stood or sat in the boat itself. The sea was rough, and our way led straight through the waves and boils of Otuni Pass, where by now the current was running strong. One man was bailing all the time, two men most of the time, while we kept the Robber Crabs as dry as we could under each end of the boat.

The forward outrigger boom threw water inboard constantly, while two streams trickled or ran through the holes where it was lashed to the boat. In any sea at all such a vessel can live only by constant bailing, and yet the natives to this day undertake long voyages in them, and not only start but arrive.

Shortly after we started and the breeze began to make, discreet but careful inquiry was made as to whether I could swim. There was point to the question. But we came back right side up in a mist of spray and glory, everybody wet and shivering, but in the highest spirits.

I in particular came home rejoicing, bringing my sheaves with me—Robber Crabs carefully tied up in sheaves of legs and claws.

The lifeboat's day had been strictly different. Shortly after she left us somebody had decided to jib the mainsail. Her rail was overloaded with people, and when the boom went over, the boat went over with it and spilled the whole company into the water.

Great excitement ensued about rescuing C. B., who swims like a fish, and about getting Giff and two or three others out from under the mainsail—which they did for themselves with promptness and dispatch.

Prof appeared on the keel of the upturned boat, quite imperturable, with his pipe in his mouth, and the others gathered there with him or swam around, in the midst, I am told, of a perfect typhoon of conversation.

Most luckily the launch saw the accident and came alongside at once. The pearl divers righted the lifeboat and bailed her out, highly amused at what they regarded—and they were right—as a huge joke on the Americans.

Nevertheless I was glad enough that we were safely out of it. And to balance the loss of two small cameras and one of Morris Gregg's crutches, we had Robber Crabs at last—yellow crabs, blue crabs, fat-tailed crabs and thin-tailed crabs, male and female. We had met them and they were ours.

XXIII

UNDER THE SEA

IN the lagoon of Toau the water is unimaginably brilliant and the colors of the coral marvelous. Great coral heads shaped like mushrooms reach up almost to the surface near the shore, and farther out wide white plateaus, also of coral, spread out just under the surface, and glisten in the sunlight as the little waves pass over them. The bottom, wherever we could see it, was white sand.

Sharks, the native divers told us, were rare anywhere inside the atoll and unknown near this shore. This was the place of places to use our diving helmets.

We had tried them out in a swimming pool on the Isthmus, and found them as simple as Simple Simon's pail. Diving in ten or fifteen feet of water between our anchorage and Naea's village of Maragnai was just as simple, but infinitely more exciting. It was fiercely interesting.

The moment the diving helmet was over your head and you went under water the brisk wind and choppy sea disappeared and everything (the faint clank of the air pump excepted) was quiet as a church. The sights and sounds of the air-breathing world simply ceased.

The sea change comes as sharply as the opening and closing of a door. From below everything above the water was invisible, shut off by the reflecting underside of the surface. Like a mirror, it turns the light back and cuts you off from everything you used to know. There may be a window directly above the helmet out of which it would be possible to look, but I could never find it.

Around the coral heads to which the lifeboat was anchored swam swarms of little fishes, some of the most brilliant blue with yellow tails; others white with glorious light blue fins and blue reflections; black fish with yellow tails and a black spot in the yellow; white fish with a black bar in the middle of the body; striped white and black fish; and so on *ad infinitum.*

Against the background of the coral their vividness was like flashes of light on a gray screen.

Each coral head itself was charming with a quieter beauty. Mauve, purple, pink, light yellow, and a vivid neutral tint (if such a thing can be). It was like standing on a white rug in a bright colored room.

The coral heads were full of crevices, canyons, and gullies in which swam many more sober kinds of fishes. Under the overhanging edges the water was full of life. Not only was the coral of the head alive, but sea urchins, sea anemones, and sea worms, with many other kinds of coral had their roots upon it and branched out from it in the most graceful and beautiful shapes.

I tried knocking off "plants" of this coral with the back of a hatchet, but found it hard to strike any effective blow through the water. Nevertheless we managed among us all to bring up a great deal, so that the deck of the *Mary Pinchot* was white with it.

The first time you go down the whole experience is so strange that you are aware of little but a general sense of wonder and delight. Gradually your mind gets wonted to the new medium, and then for dive after dive you find things unseen before.

At first the view is vague and gray. Objects fade out of sight a hundred or two hundred feet away. Distances are difficult to estimate.

Commonly at first I reached out my hand to touch things that were feet beyond my reach. When Cleaves came down in another helmet with his camera in a waterproof box we walked toward each other and grasped at each other's hands three or four separate times before we reached them. We could see each other's faces with the utmost clearness but could, of course, hear nothing.

Our first underwater pictures were not successful. They were not properly focused, which means that three feet, beneath the surface, is not the same in the matter of light and lenses as three feet on the land. Photographing fish at home is a problem all by itself.

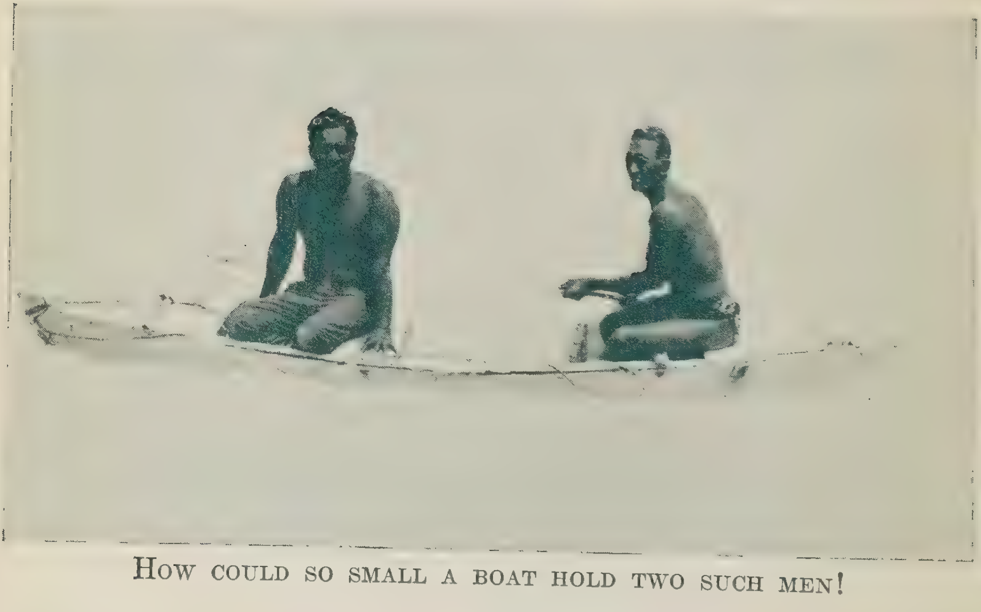
When I had lost some of the sense of unreality and wonder which made observation so difficult at first, I began to see prizes hidden before.

Giff starts for the bottom of the sea

C. B. about to put on her diving helmet

Letting go all holds

Rare corals were anything but rare

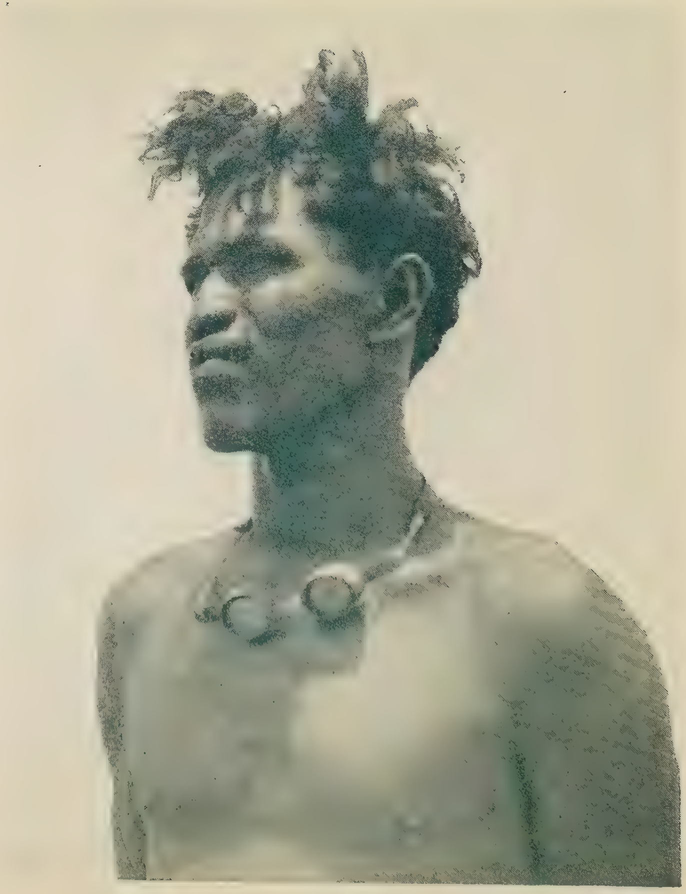


How could so small a boat hold two such men!

THEY BUILD HOUSES WITH COCONUT LEAVES

THE WAY THEY LIVE AT TOAU

THE DAY OF THE GRASS SKIRT IS PAST



THE DIVER TU AND HIS DIVING GOGGLES

First I noticed a triangular mark the size of my palm in a wall of coral. Examination showed it to be a shell completely surrounded except on the outer side. I dug it out with some difficulty with the point of a hatchet. Prof declared it to be new to him on this trip but probably not new to science.

Another shell I found which may be new to science; indeed, a whole small coral head covered with them. Prof and C. B. acquired three of them at the cost of a day's hard work, and I added a couple more. Meanwhile A. K.'s collecting included material of which the National Museum wrote: "The lizards from the Tuamotu Archipelago are particularly welcome as establishing new locality records."

Tridacnas (giant clams) eight or ten inches long hidden in the coral showed only as wavy lines of black flush with the surface. This was the fleshy mantle showing against the border of the shell. Often it was dotted with the most brilliant blue or green.

Collecting Tridacnas was not always simple. Some of them closed when you came within a yard of them, but usually it was easy to plunge a knife between the lips, work it back and forth, cut the strong short cable which held the shell to the rock, tear it loose, and pull it out.

Spearing fish also took some doing. The fish could swim so much faster than I could move my hand that I gave it up. Giff, however, succeeded in getting one, and the native divers got them as they chose.

Giff and Stiff were in the water all day long. They even shifted the helmet from one to the other on the sea bottom, when it was time to change, instead of in the boat. The helmetless one merely let himself rise to the top and went about his business, while the helmeted youngster hunted shells.

C. B. went down repeatedly and loved it. She not only walked in a new world on the bottom of the sea, but she had discovered a new way of getting under water without wetting her hair.

Walking is slow in water up to your neck. It is still slower in water over your helmet. To make progress at anything over a yard a minute you must walk sidewise or backwards, shoving yourself along. The two windows in your helmet are in front, and thus you fail to see where you are going. In consequence you stumble over larger and smaller pieces of coral, all of which are edged with living spears and scrapers and abrasives, and the result is to convince the unbiased that what the well-dressed man should wear under the sea is leggings. Heavy woolen mittens, also, are good to keep the coral from tearing your fingers to pieces.

And that is by no means all. Any man who gets cold as easily in the water as I do ought to dress up in the heaviest winter clothes, and especially in woolen underclothing, with two or three sweaters to top off with. That is, if you want to stay down as long as you will want to stay down when you go.

The thing to do is to make long dives, fifteen or twenty minutes at the least, instead of coming up and shivering in the wind and then going down again. Moreover, it would be better to dive only in the morning when the wind is less and the light better. We found that the pearl divers go down only in good weather.

The Tuamotuans are not only divers but they know boats. Once one of their little pirogues that we were towing filled with water. A diver who must have weighed two hundred pounds at least jumped overboard, emptied it by pushing it forward and back just as we would empty a canoe at home, and then climbed into this cockleshell, which seemed almost too small to hold his legs from the knee down, and went off in it.

Like the canoes we have seen all the way down from Grand Cayman, these little pirogues are not expected to float in a seaway unless bailing goes on pretty much all the time.

Naea and his son-in-law Lucien came out to see us use the diving helmet, and Lucien went down in it, but not Naea. Then came my old friend Tuohea, the man who can count ten, and three other divers. Matuanui, reputed to be the best diver hereabouts, put on the helmet first and had some difficulty persuading himself to drop off the ladder. Then old Tuohea came over, got into the helmet, went off without the slightest fuss, and stayed down about ten minutes. The other two divers refused to go.

The Tuamotuans were even nicer and more generous than the Marquesans, if that were possible. When I asked one day, for example, if we could buy eight or ten pearl oysters brought up that day by the divers, Lucien announced that these shells were to be presented to Madame Pinchot because of her kindness, and they would take no pay.

Tu, a far-traveled diver who spoke some English, explained which shells were given by which men, including two by Tu, and all because they were so well pleased. C. B. had succeeded as usual in establishing the most cordial relations.

We liked the Toauans so much that C. B. resolved to entertain them aboard. On the night set, the first launch load reached the ship at seven o'clock. The Pinchots greeted them cordially at the gangway, and then they sat about politely and very primly, saying and doing nothing, like a Quaker meeting.

With the second load came Lucien and the Chief. I gave the latter one of the wicker armchairs out of the main cabin, and made him sit in it—to his very evident delight.

With the third boatload arrived two dogs that had swum out to the launch and had to be taken up to save them from drowning. Left in the launch at the boom, they were so anxious to come to the party that they jumped into the sea and both of them were hauled aboard at the gangway on the opposite side of the ship.

The sun went down in glory behind Toau lagoon

THE TUAMOTUANS WERE EVEN NICER AND MORE GENEROUS THAN THE MARQUESANS, IF THAT WERE POSSIBLE

Our stores were pretty well exhausted, but C. B. gave presents of candles and cans of spaghetti to everybody, while I presented two fishhooks to each of the fifty-five who came aboard, and machetes to the six leading men.

Pretty soon the party began to warm up. Lucien sang a song in Tahitian, and then a song in French. A chorus followed. It began with a short speech on the part of the musical conductor, and another by the 57-year-old diver, Tuohea, who was firmly resolved to be in every play.

The actual singing started when out of the silence a woman shrieked a few words, speedily followed by all the rest. It was part singing, something like what we heard in the Marquesas, but yet entirely different in the wildness of the impression it made. For a good while I was puzzled to say what it was I had been listening to, and then it came to me. It was human bagpipe music, intense, wild, fitful, nasal—exactly like bagpipes—and consequently most exciting.

Then A. K. gave his famous Sioux war dance, concerning which the spectators were obviously in doubt until old Tuohea, who had repeatedly broken into the singing with a furious wriggling dance, darted out to play opposite A. K. just as the comic little policeman did at Hana Vave. That broke the ice and everybody began to have a real good time.

Torp made a great hit with tumbling and juggling. After him Bourget muscled out the 35-pound lead, but none of the divers could match him. Tuohea did as well as any. He must have been a magnificent man in his prime and a marvelous athlete, for after seeing Stiff and Taylor skip rope, he took a rope himself and skipped so well that from the very start no skipper could have skipped better.

Then came more native singing and dancing. The latter was like Marquesan dancing but very much inferior to it. At first one woman danced alone with six men, then two women, and then Tuohea broke in with the most tremendously vigorous impromptus of his own. When Cleaves was ready to take motion pictures of the dancing by the light of flares, Tuohea took off his shirt and went at it so hard that the sweat streamed from him as if he had been harvesting and he panted like a dog when the dance was over. It was a shirt I had given him, and he wore it with the tails outside. He was a dead game sport.

When the presents were all given and the supper all eaten, and we *Mary Pinchots* pretty well worn out, about eleven o'clock I asked Bourget to bring the launch around. But Tuohea promptly got up and made a vigorous speech in which he said they were not tired yet, and inasmuch as we were leaving the next day they proposed to stay with us for a couple of hours more. So we had more dancing and more singing.

Before long most of us were bleary-eyed with sleepiness. Finally someone (not Tuohea) got up and made another speech and said they were tired now and ready to go. It took four launch trips to carry them in, and I was glad when it was safely done, for the neighborhood of the landing was filled with coral heads.

When the last boat load left the ship it was ten minutes to one. The evening might fairly be said to be over.

During the course of the party Sparks came and told me that an English ship, the *City of Corinth*, was asking by wireless whether the *Mary Pinchot* carried a doctor. We told her that we did. Whereupon the *Corinth* said that the *King Stephen*, a third vessel, had a sick engineer aboard and was anxious for medical advice. Our doctor asked for symptoms, which the *Stephen* sent us through the *Corinth*, and through the *Corinth* he sent his orders back.

The Doctor's absent treatment was evidently successful. Two days later came *King Stephen's* thanks. The engineer was better.

The morning after the party, while C. B. and I were ashore with The Doctor, translating for him as he treated his numerous patients, every man, woman, and child we saw came up and shook hands with us with the utmost cordiality. The party had been a success.

At last the time came to say good-by. The *Mary* towed Naea's pirogue behind her as he took us to the pass and there bade us good-by. He carried back with him a tub full of special whale line for himself and a few trolling spoons, which the Tuamotuans prize most highly, for some of the men I had come to know and like. The pirogue was so narrow that the tub had to set on its edge, but there was still room for the boom to swing over it.

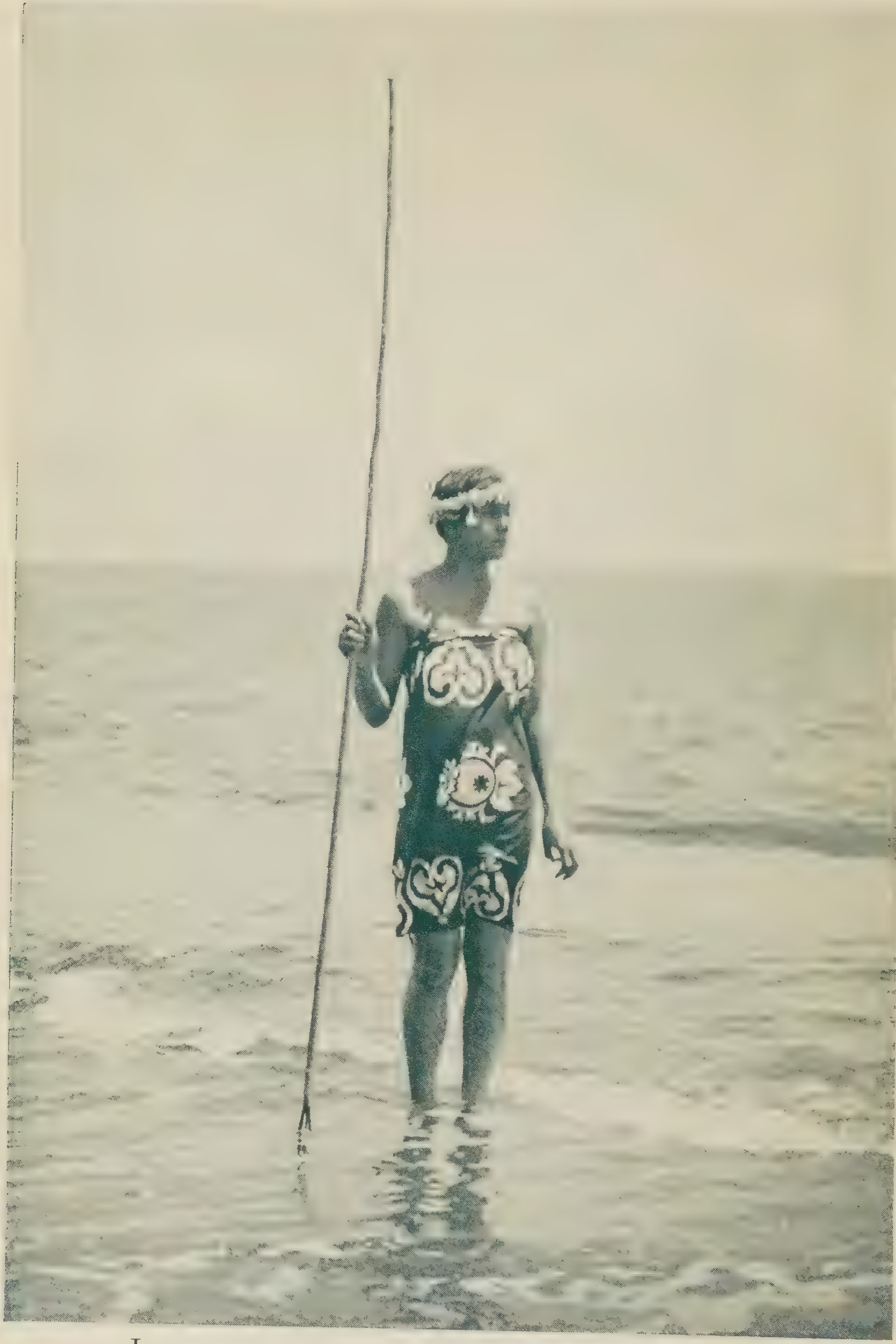
And so amid mutual gestures of good will we left him.

The Tuamotuan species of pearl oyster is *Margaritophora margaritifera cumingi* (Reeve), if anybody should ask you. It is commonly known as "black-lip pearl oyster," and the trade name is "Tahiti shell." Diving for it is a trade that cannot be learned in a week or a month or a year. The pearl diver must grow into his calling, which he can follow only after long preliminary training and the practice of a rigid technique. No casual observer can either understand pearl diving or describe it.

You will recall the Mormon Elders we met at Takaroa. One of them, Elder W. H. Conover, a high-school boy but an Elder none the less, and a highly intelligent one, had not only lived with pearl divers but had worked with them. And that is the best of all ways to understand.

He was good enough to give me his account of the diving, and permission to print it in this book. If you want to know how the button on your shirt started on its journey to you, you cannot do better than read what Elder Conover has to say:

THE FINEST DANCER OF THEM ALL



IN THE GOOD OLD DAYS THEY WERE ALL LIKE THIS

"Hikueru is a low coral reef island with the customary lagoon filling the entire center. It is ten miles long and five miles wide. Hikueru has no pass, as many of the neighboring islands have, thereby causing its lagoon to be more or less free from the larger sharks which are very much feared by the natives, for a good reason.

"We notice that there is rather a large population and considerable hustle and bustle upon the island which is lacking upon the surrounding islands. We see many places of business with Chinamen as their proprietors, who have come to sell their wares at a very high price to the natives who are flushed with money from their diving efforts. There is even a theater, or at least a place where moving pictures are shown. It matters not that the pictures are very, very many years old and that they are repeated every few weeks, because the entire stock consists of only a dozen or so numbers. The place is well patronized because the native must spend his money somewhere.

"The natives have gathered here at Hikueru from the many islands round about for the six months diving season, because Hikueru is the best diving island in the group. After the season, they will return to their various islands, and Hikueru will become as dead as the rest of them until the next diving season.

"The diving season is supervised by the Government and occurs about every two years or so. One-half of the lagoon is open for one season and then the other half is opened for the next.

"'Tis almost seven A. M., and all of the divers and their assistants are gathering down at the shore of the lagoon taking down their outrigger canoes from the props where they were placed for the night. Others who dragged their canoes up on the shore the evening before are now carrying them down into the water. Some fifty yards from shore there are several power boats coughing up and down, taking in tow the canoes as they are rowed out from shore.

"We step into one of the canoes which is owned by Tuhiva, a large, finely built native. He is going to do the diving today, while we act as his assistants. Shortly after putting off from shore, we are picked up by one of the power launches; that is, we tie our canoe at the end of another, which is at the end of the line of canoes being trailed by the boat.

"We do not have long to wait, because the canoes are now all lined up back of the boats and the boats are now heading out into the lagoon, pulling their many canoes behind them much as a railroad engine pulls its seventy or eighty freight cars. While we are going out to the spot where we will work for the day, we will have time to observe our canoe and the equipment required by a pearl diver.

"Our canoe is the same as the ordinary canoe used by the natives of the Tuamotus, being made of lumber, usually with a board about an inch and a quarter thick, twenty inches wide, and twenty feet long forming each side, with a much narrower board being used as the bottom. It is built in the form of a wedge, and would easily capsize were it not for the outrigger, which consists of a pole about the same length as the canoe and some six or seven inches in diameter. This pole rests in the water about eight feet to one side, and is fastened to the canoe proper by two supports, one of which is rigid and only allows the canoe to rock from side to side as the outrigger is raised or lowered in the water. The other support, at the other end, is very limber and pliable, allowing the one end of the outrigger pole to play up and down with the waves without having very much effect upon the canoe itself.

"In the canoe we notice two paddles and two lead weights, weighing about sixteen pounds apiece. One of the lead weights is fastened on the end of a coil of small rope some five hundred feet long. The other is tied at the end of one hundred and fifty feet of larger rope. There is also a large net basket with a rigid rim about two feet in diameter fastened at the end of a hundred and fifty feet of large rope.

"In the center of the canoe and resting on the edges is a platform about three feet square. At one end of the canoe is a soap box which contains two rather thin butcher knives, a pair of diving glasses, a loin cloth, a cloth mitten, a bottle of water, and a little food for our noon-day lunch.

"The boats are now well out in the lagoon and the various canoes have started to drop off and spread themselves out for the day's diving. Tuhiva has decided that we are now in a good section, so we detach ourselves from the lineup, and after paddling our canoe for some time to one side, the lead weight on the long rope is put down for an anchor.

"When the anchor reaches the bottom, one of the paddles is then tied on the anchor rope and thrown overboard to act as a buoy from which rope is played out, allowing the canoe to drift back with the wind until it reaches the position desired. The rope is then made fast and we are located for the first dive.

"The next step is to lower the large basket, which has been weighted with a large rock, over the side until, by the rope going slack, we know that it has reached the bottom twenty-three fathoms below. It is then pulled up and fastened a foot or two from the bottom, to clear the basket of the bottom, so that we can move the canoe from time to time for new territory and yet the basket remain directly under us. The other lead weight is then put in a handy place with the rope neatly coiled on the platform and the other end tied securely to a part of the canoe.

"When these preparations are finished, Tuhiva requests us to remove our hats while he says his prayer before diving. After we comply, he very earnestly and sincerely prays to God that he may be successful in his diving and that he may not be overtaken with any misfortune while in the depths below. (I have never encountered a native diver yet, whether Mormon, Catholic, or Protestant, but who always prays before starting his day's diving.)

"Our diver than changes to his loin cloth, meanwhile preparing his lungs for diving. This is done by taking deep breaths, singing snatches of native songs, and whistling. He then puts the cloth mitten upon his right hand to protect it while detaching shells from the bottom, adjusts his diving glasses, grasps the rope which is on the platform, close to the lead weight, takes a deep breath, holds his nose, and drops over the side.

"We lean over the edge of the canoe and watch his form descending rapidly through the clear lagoon waters toward the bottom some one hundred thirty-eight feet below. The lead weight to which he clings is his high-powered machine to pull him down. By looking at our watches, we notice that we are able to see him for about twelve seconds, or until he merges into the misty depths below. Our attention is then called to the coil of rope upon the platform, which is uncoiling as Tuhiva descends.

"Approximately thirty seconds after our diver drops over the side he reaches the bottom, and the coil of rope is exhausted. Several times during his descent, while holding his nose, he has forced air into his inner ears to equalize the intense pressure of the sea. We on the surface sit in the canoe and wait for what seems an extremely long time. However, our watches tell us that he has been down only one minute and twenty seconds when we feel a slight tug upon the canoe. These slight jerks continue for about twenty seconds and then Tuhiva's head pops out of the water. He has pulled himself to the surface by means of the basket rope.

"He takes a short breath, and buries his head again in the water for a few moments. (Why he and other divers do this I cannot say, unless it is to avoid too sudden a change.) He then pulls himself into the canoe, dries himself with a towel, and his first dive is completed. Some divers remain in the water until their basket is filled.

"Upon inquiry as to what takes place while he is on the bottom, Tuhiva informs us that when he reaches the bottom, he is able, due to the pressure, to walk upon the bottom much as one does on shore. He has no tendency to rise to the surface as one does in more shallow water. (This is probably due to the fact that the enormous pressure condenses the body to a certain extent, thereby making its specific gravity a little greater.)

"He then gathers the pearl shells which are close about, pulling them from their fastenings with his mittened hand and putting them in the basket which is close to the bottom. He continues to gather shells until his heart gives a bump or catch. This warns him that it is time to go up, so he pulls himself up on the basket rope.

"After each dive and after the diver has returned to the surface, his assistant, which happens to be us today, pulls up the lead weight, neatly coiling the rope upon the platform for the next dive. The weight is always left down until the diver returns to the top. This is a precaution in case the basket rope should become detached from the canoe or broken, in which case the weight rope would furnish a means whereby he could regain the surface.

"Our diver continues his work, making a dive about every five minutes. Between each dive, a little anchor rope is let out or tied to one side or another which causes the canoe to drift over a new spot, thereby giving us new territory for each dive. After an hour and a half or so the basket is full and we hoist it up into the canoe. The diver then rests for about half an hour while we remove from the shells any foreign sea growth which may have accumulated there. The next step is to open the shells and look for pearls.

"This is done by forcing the blade of one of the thin butcher knives between the leaves of the shell and severing the muscle which holds the shell firmly together. The shell is then relaxed and we are able to scrape the animal from the sides of the shell and flip it out upon our small platform. The two leaves of the shell are then broken apart and dropped into the bottom of the canoe.

"During this operation, a sharp lookout is kept for any pearls there might be. The oyster or muscle is also closely examined, being run through the fingers. It is not, however, thrown overboard until after the day's diving is completed because it would draw sharks. They are sometimes kept for food, as they resemble an oyster very much.

"The work continues on in this fashion until three or four o'clock in the afternoon, when the power boats begin to collect the canoes to tow ashore. The average diver gets a little under two hundred pounds of pearl shell a day, for which he receives six cents a pound.

"Almost every day he will get a few very small ill-shaped pearls that are practically valueless, and occasionally a fairly nice pearl which brings him a neat sum, and rarely a nice big beautiful pearl that nets him a fortune in a native's standard of wealth. Twenty shells must be given to the power boat by each canoe to pay for the services rendered. Pearl shell ranges from six to twelve inches in diameter, it being against the law to take shells under six inches."

XXIV

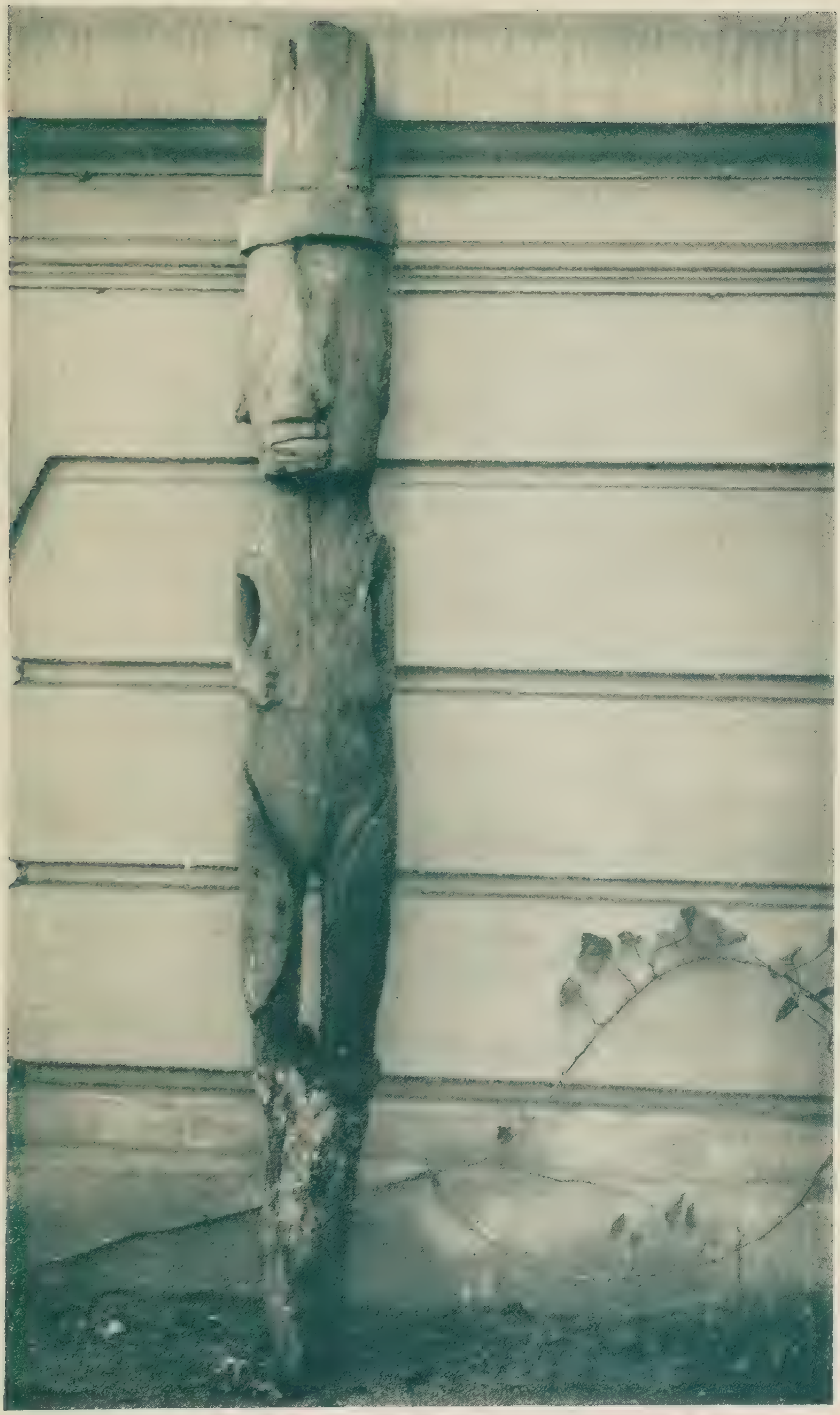
TIKI AND TAHITI

A FINE sailing breeze out of the southeast hurried us toward Tahiti. All the night the sea was rough, but no rougher than having to leave Toau, where we wanted to stay, and ought to have stayed, at least a month. At three o'clock in the morning a big roll brought everybody out, like ants rushing from an ant hill, but no great harm was done.

After breakfast a glorious sailing breeze and a very high sea. In spite of it the schooner was dry and comfortable, and every motion she made was smooth and easy. We logged better than ten knots under sail alone, and over twelve with sail and power.

When the sun had cleared away the mists, Tahiti loomed up thirty miles away, a magnificent high island full of mountain peaks, but in our eyes not to be classed with the Marquesas.

Papeete is one of the finest of harbors, completely protected on the ocean side by coral reefs, and with a narrow entrance which does not admit the ocean swell. In spite of the high sea we had just come through, this was the first anchorage in a long time at which absolutely no motion was felt on the ship.



Tikis of Temanu wood were sometimes used as doorposts

An island schooner at Takaroa loading copra for Tahiti

The town lay stretched along the harbor side, much of it behind a forest of schooner masts. It was beautiful to look at, and attractive to a degree, but compared with the places we had come from, it left us a little cold.

The first time I saw our own West, back in the dark ages of human history, I had a piece of luck. I went first to the Yosemite, and with a fresh mind let all its glorious marvels sink deep in. Then I went to the Grand Canyon of Arizona—and saw there the glory of the Lord revealed in stone as I never saw it elsewhere before or since. But if I had gone to the Canyon first, Yosemite would have lost three-quarters of its thrill. We ought to have seen Tahiti first.

But we were here, and we were met at the landing steps by Major Garrity, the American Consul, who did everything that could possibly be done for us. Then we took a taxi—a taxi, after months of uninhabited islands—and went to look for Charles Nordhoff, whose stories of the South Seas, to say nothing of his letters of advice, had made me feel as if I knew him intimately.

We found him with his delightful wife and children, and were fortunate in finding them. Moreover, Nordhoff is enormously interested in fishing, and that is my weak side.

Then with Nordhoff to see Norman Hall, whose stories, like Nordhoff's, have the true flavor of the Southern Ocean. And behold! the Halls were as charming as the Nordhoffs. But Hall turns to the mountains as Nordhoff to the sea.

Next morning C. B. and I went with Major Garrity to call upon the Governor of French Oceania, Monsieur Bouge. He knew of our coming (we never beat the news of us at any turn), and he evidently expected us to be of the breed of grabby tourist which is unfortunately too common around the world. That was why he had sent a customs officer to seize the tikis which we had brought for his inspection and disposal.

"Monsieur le Gouverneur," said C. B., "comme vous savez nous venons des isles Tuamotus et des isles Marquises. In these last, at Ua Huka, we heard of tikis, idols of the Marquesans no longer worshiped. But we found the natives undeniably reluctant to introduce us to their ancient gods. It was evident that the tiki still remains a sort of skeleton-in-the-closet to the islanders, and that their strong inclination is to let sleeping gods lie, lest by any chance some slight remaining power of evil might still reside in them.

"At last one possessor of a huge machete volunteered to act as my guide, and I set forth on foot alone with him (my husband being vastly occupied with catching Mantas). I was not sorry when, after a few minutes, The Doctor and his companion caught up with us, having discovered meanwhile that the machete man was slightly drunk."

"Ce sont de braves gens," said the Governor. "They are good people and you were quite safe with them."

"So I thought," said C. B., and continued with her story.

"As the news of our excursion spread, a scattering crowd of small boys and women followed in our wake. From the rough trail our little company finally struck off into dense brush, through which the wicked looking machete of my guide was intended to cut a way. We were moving back into old days. We passed a great hole, stone lined, in which the popoi reserved for ceremonial observance used to be buried and kept for years. My guide hacked a long tunnel though the brush. We came to the Chief's seat, a great and very comfortable lounging place made of three stone slabs tilted somewhat after the manner of an automobile seat.

"Beyond the Chief's seat," C. B. went on, "were the remains of a sort of stone floor or terrace. Further than this our native guide explained to us by signs, and in his few words of halting French, that it was taboo for any female to pass. The women who were with us giggled and laughed, but I noticed that nothing would induce them to go farther. So probably the old superstition still held.

"Up to now the machete had been used only on desultory undergrowth, but now we were faced with an impenetrable thicket of a kind of thorny brush perhaps twenty feet high, and the cutting started in earnest. It took perhaps half an hour to hack a narrow tunnel into this thicket, and it was not an easy job, as the bleeding hands of the men testified.

"Finally a narrow tunnel was cut, through which we crawled on our hands and knees. After about twenty feet it veered sharply to the left, and after another ten feet or so we came upon a tiki made of red stone, perhaps four feet high, thick and heavy—huge head—enormous eyes—and atrophied body, like all of them.

"The undergrowth was less thick here, and it was not difficult to clear a sort of path to the right and left—and on each side we found two other statues—the one on the left prone on the ground—and the one on the right mutilated and headless, or rather with part of the head gone."

"You had good luck," said the Governor.

"Wait," said C. B. "I noticed that the man with the machete had gone back into the main tunnel. Soon he signed to us to follow him. We found he had cut another path and was pointing to another tiki lying on the ground, bigger than the others, this one, and in the shape of a woman. We tried to take some pictures, but with small success, for the light was poor and my camera a very little one.

"It was decidedly exciting, finding these statues (if they can be called that), possibly never seen before by the eye of a white man, lying on the actual spot where they had been worshiped (?) for hundreds of years.

"My collector blood urged me to find out if they could be bought, and a little conversation indicated

ALL DRESSED UP AND NO PLACE TO GO BUT HOME

Tahiti Harbor is a busy place

We hated to leave the ship and the crew

that the natives would probably let us have them for a song. But in some ways it seemed a shame to take them off, even for a museum—and anyhow I had heard rumors that the French Government did have some slight objections to things being taken out of the country. So we did nothing further about it.

"In the next valley some of the chiefs came and offered to take us to see three wooden tikis. But I did not have time to go, upon which they offered to bring them down to the shore next morning if we could come back to see them. When we got there we found three wooden figures, rotting to pieces, and a small stone one also.

"The natives assured us that there was no objection to our carrying them off, so we paid them what they asked. But we became suspicious that there might be, and consequently did our possible best to get in touch by wireless with Doctor Rollin at Atuona, for whom my husband and I had come to have the greatest admiration. But message after message failed to bring a reply.

"We knew, however, there was a French official on Nuku Hiva, and when we anchored in the glorious bay of Taiohae, Monsieur Triffe, the official in question, was the first man to come aboard. To him we showed the tikis and told the story. And it was at his suggestion that we decided to bring them with us to Tahiti and submit them to you, Monsieur le Gouverneur, for your decision.

"If you prefer that we should leave them in your museum at Tahiti, we shall be happy to do so. If you allow us to take them with us, we shall be happy. Again, if you give us half and take half for your collections, we shall still be happy. It would give us great pleasure to take some tikis back with us to the United States. But we have no desire whatever to despoil these islands of any memorials of their vanished culture which ought to be preserved."

When he discovered that ours was no piratical excursion, the Governor became extremely cordial, presented us with two mounted Robber Crabs bigger than any we had caught, and invited us to breakfast, which in French means lunch. Before we left he sent us back half of our tikis, a stone and a wooden one. Whereat C. B. rejoiced.

The Governor found himself speedily in sympathy with the object of our expedition, for he is a conchologist of no mean attainments, and Prof and he foregathered at once, as fellow craftsmen do.

The lunch with the Governor and Madame Bouge brought back old days in France. There were about twenty at the table, including Captain Wells of the British cruiser *Diomede*, and a number of French officials.

Among the latter was Monsieur Hervé, Administrator of the Tuamotus, who, with his wife, came to supper with us before we sailed for home. He had been a colonist on the island of Apataki before he was

Administrator, and altogether had lived in the islands about fifteen years. He was engaged in an effort to cultivate pearl oysters and increase the number of pearls, and came into the Administration first in a lower place as inspector of pearl fisheries, which is the way good administrators are apt to be made.

In the courtyard of the Museum M. Hervé showed C. B. and me a very old short iron cannon (carronade). "I knew," said he, "that the chart of the atoll of Amanu was wrong. I was resurveying it with the Chief, and said to him I noticed there were no wrecks upon the island.

" 'There is one,' said he.

" 'Show it to me,' said I, and then he took me to where this cannon and three others were lying under the water on the reef, and near by a pile of stones that never were native to the Tuamotu Islands. He said the vessel went ashore eight generations before (roughly two hundred years), and that its whole crew were eaten by the cannibals of Amanu. Beyond that he knew nothing."

Monsieur Hervé believed these cannon marked the last resting place of a Spanish exploring ship sent out from Peru, and that the pile of alien stones came from her ballast.

Prof tried on our return to trace the origin of these stones, and so perhaps to reconstruct a little the history of the ship that carried them—so far with small success.

Tahiti, which disputes with Honolulu the title of "Cross Roads of the Pacific," is full of many things that Taiohae or Atuona lack—telephones, electric lights, bicycles (which are everywhere), and automobiles. It is a busy thriving commercial town with many delightful people, Americans, English, and French, among its permanent population—and lots of Chinamen. The Chinamen have almost driven the French out of business in Tahiti, and appear to be rapidly driving the other whites out also.

The town is clean as a whistle, and as to its market, none cleaner ever gladdened my wandering eye.

Nordhoff took me fishing. We had a gorgeous time but caught no fish except one glorious Bonito, which A. K. appropriated and pickled for the National Museum the moment it came aboard.

C. B. and I went fishing also with Mr. and Mrs. Guild, out through the pass in front of their house, to try for Marlin in one of Zane Grey's famous fishing launches. It was thirty-two feet long, decked over in front of the windshield, fitted with two Red Wing engines, and equipped with the best swivel chair I ever sat in. But it buried its nose in the little sea we had, and was no boat to fish from in rough water.

I was fishing with an Atlapac reel, a rather stiff hickory rod, not my own, 300 yards of 24-thread line, and a feather jig made by Guild, very much in the image of the Japanese ones, when something hit me hard, and suddenly out of the water came a Marlin.

The Guilds were filled with furious excitement, for they had been fishing a long time for Marlin under Zane Grey's instructions, and had never landed one. This fish first made a splendid rush along the surface, out of the water half the time, and then short spurts of fifty to seventy-five yards, each ending with a leap into the air. Finally it made a run which took out nearly the whole of my 300 yards of line, and the launch had to chase it hard to keep from losing it. Then it went down.

The hook on my feather jig was a long-pointed 8–0 Siwash hook, the sort they use for Salmon in British Columbia. Guild told me it was weak, so I treated that Marlin with distinguished consideration. After half an hour of careful working, the fish came suddenly to the surface, made a feeble attempt to jump, failed, went down again, and a minute or two later had been gaffed and pulled aboard by his long nose.

Throughout the fight the Guilds hammered me on the back and heaped me and the fish alike with affectionate abuse, with occasional diversions to C. B., and generally acted like overgrown children, which is altogether the best way to act with a big fish on the hook.

It was a great afternoon. It had to be when the length of this Marlin was eight feet two inches, and weight 154 pounds. So far as I know, this was the first Marlin actually landed with a feather jig.

Mrs. Guild hooked one with this bait, fought it for two and a half hours, and then lost it. Her boatman hooked another on a hand line with the same bait, and so did Nordhoff. Both got away.

Marlin may be less choosey than people think, certain big game fishermen to the contrary notwithstanding. I know of a Marlin that was hooked off Block Island with the regular Tuna jig.

By now the end of the cruise had got to be far too close for comfort. Conservation work to be done fixed November first as the last day for being back in Washington, and the *Mary* could not get us there for months after that. So we prepared to take the steamer *Makura*, leaving the *Mary* to return by way of Rapa, Easter Island, the Galapagos again, and the Canal to her winter station at Savannah, where, after her voyage of 19,594 miles, she is peacefully preparing for her next cruise while these lines are written.

We hated to leave the *Mary*. Many an eye was not as dry as it had been, when the crew, dressed in their whites, came down to see us off, and later waved their good-bys to us from the forecastle of the *Mary* till, as individuals, we were long out of sight. The old Chief stood on the forecastle head and waved not only his cap but his handkerchief until both he and they must have been about worn out.

We had been warned time and again that white crews go wild when they get into the South Seas. It is greatly to the credit of ours that nothing of the kind took place. The *Mary* returned to Savannah with precisely the same crew with which she left Balboa seven months before.

Her voyage from Tahiti to the Galapagos, during which she went far south in search of favorable winds, and on which she had but four rough days, took thirty-seven and a half days; and from the Canal to Savannah nine and a half days, during which she met the roughest weather of the entire trip.

On the whole voyage, from March 31 to December 23, 1929, there was no serious accident, no dangerous illness, and no failure to carry out our plans except that caused by the delays which followed the grounding off Cape Canaveral and the accident at Barrington.

Scientifically, according to the officials of the National Museum, the trip was worth while. Five hundred skins of birds A. K. sent or brought back with him, one a new species, and twenty-two new to the collections at Washington. Many new records of occurrence were made in various fields from localities which do not seem to have been visited by other collectors. Twenty-five species of reptiles and many more of insects, many kinds of crustaceans, the Mantas and other fishes, and a few plants are now being worked up. Wild cotton seeds of many kinds collected in the Galapagos and Marquesas Islands were welcomed by the Bureau of Plant Industry, especially for the possibility of using them in crosses to develop greater resistance to cold, insects, and disease.

The largest and doubtless the most important series, with the most new species and even genera, and potentially the largest additions to our knowledge, were the land shells, work upon which has only just begun. Among the land mollusks from islands in the Caribbean, about twenty-five new species and one new genus have been found. The Cocos, Galapagos, and Marquesan shell collections have not yet been studied.

Not least among the good things gathered on the trip are two thousand still pictures and more than seven miles of movie film. The very stuff that dreams are made of. Dreams come true after forty years!

"I wish," says one of the appreciative letters from the National Museum, "there were more such expeditions to come." As for me, I have not only the wish but the will.

For us who went this trip was a success. We caught some gorgeous fish, we had a glorious sail, we added, by however little, to the knowledge of the world in which we live. But best of all, I think, we brought new experience and new interest into our lives, and laid up for ourselves memories which will brighten many a summer day and bring cheer to many a winter fire.

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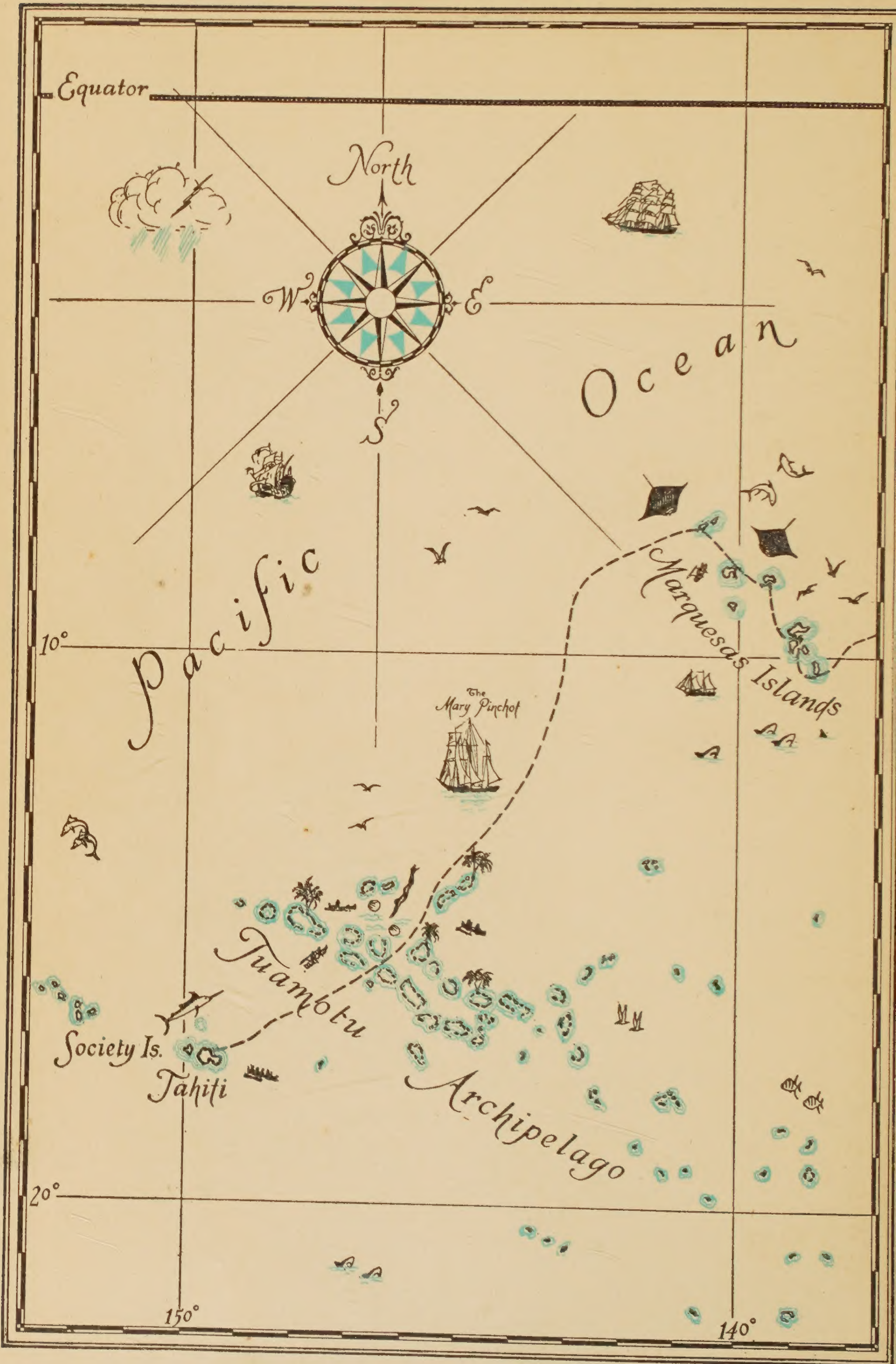
Equator
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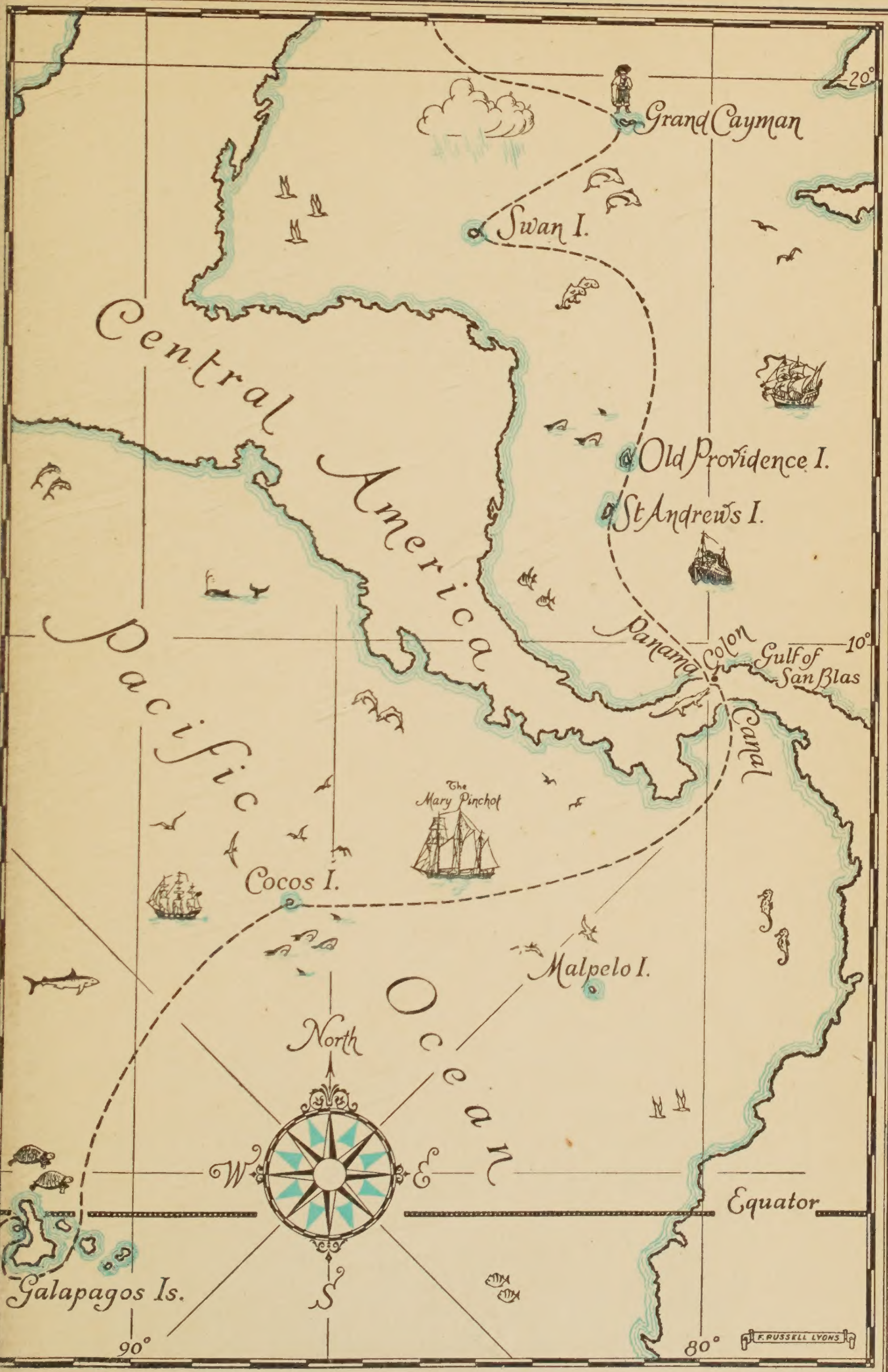
The Mary Pinchot
Marquesas Islands
Tuamotu Archipelago
Society Is.
Tahiti
20°
150°
140°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Grand Cayman
Swan I.
Central America
Old Providence I.
St Andrews I.
Panama
Colon
Gulf of San Blas
10°
Canal
Pacific Ocean
The Mary Pinchot
Cocos I.
Malpelo I.
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80°
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